AUSTRALIAN Wood REVIEW

127

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Paul Barton's signature technique

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ON TEST

- LAGUNA FUSION 1 TABLESAW
- HERITAGE RIP & CROSSCUT SAWS
- BLUE SPRUCE ROUTER PLANE
- WOODFAST PLANER-THICKNESSER

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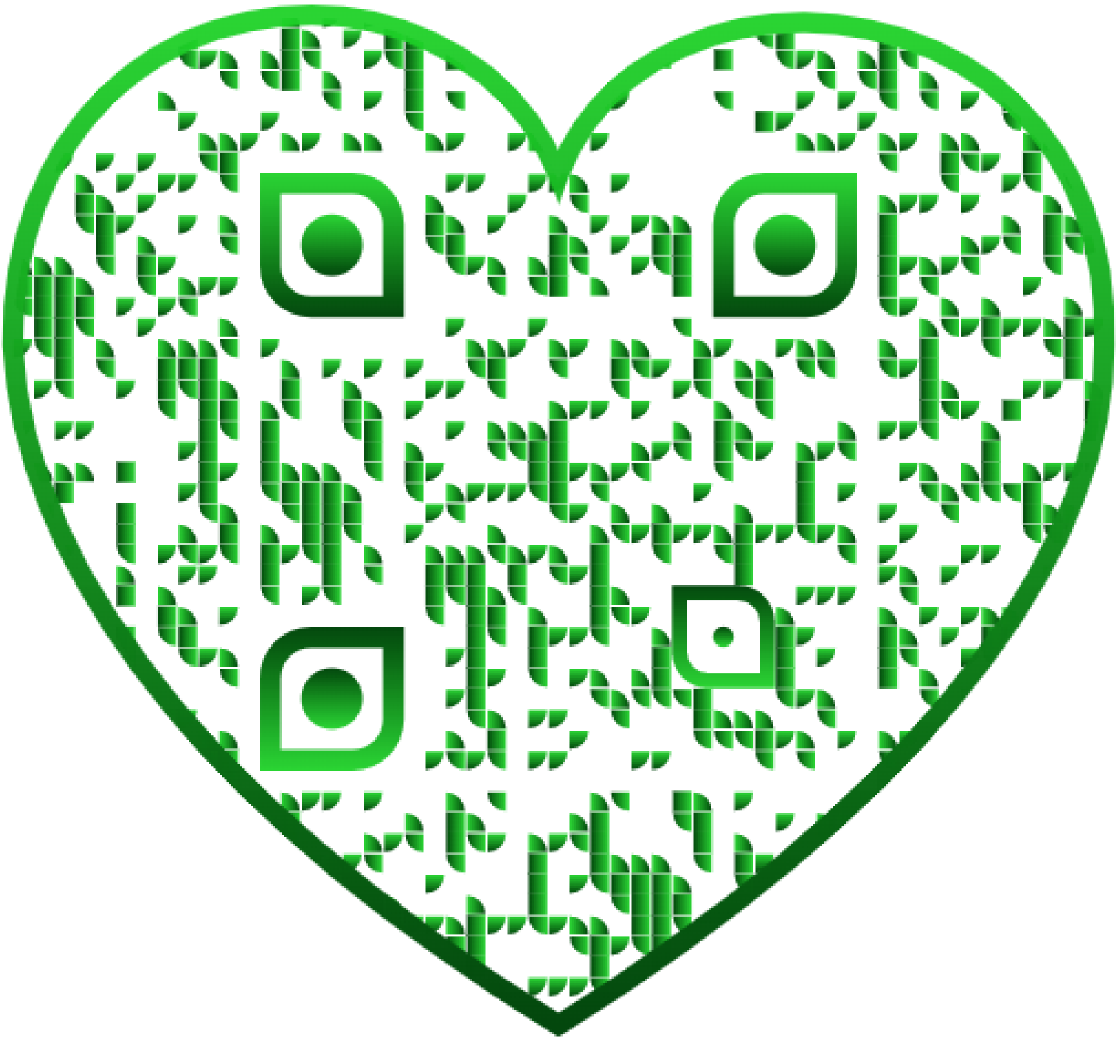

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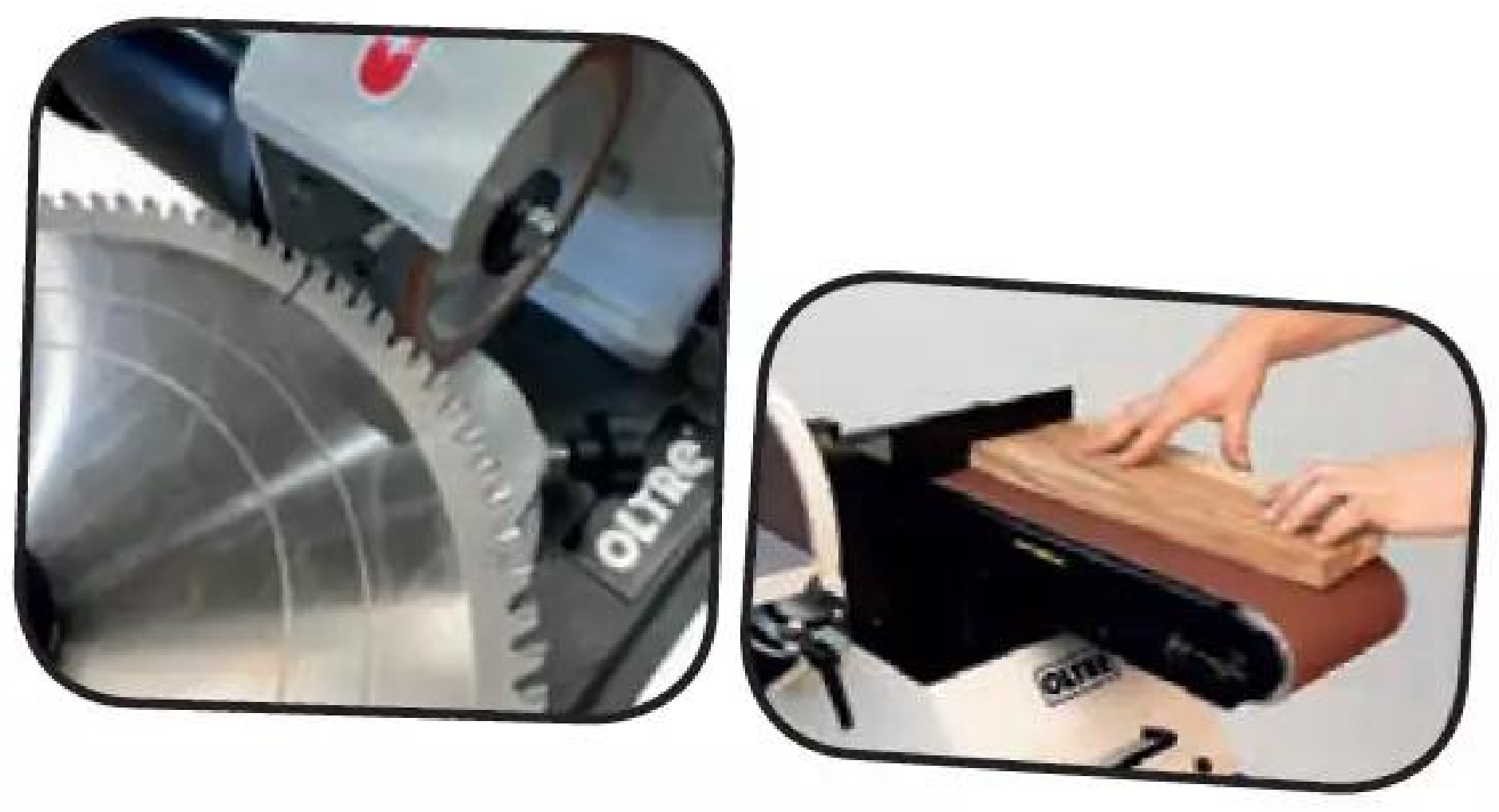

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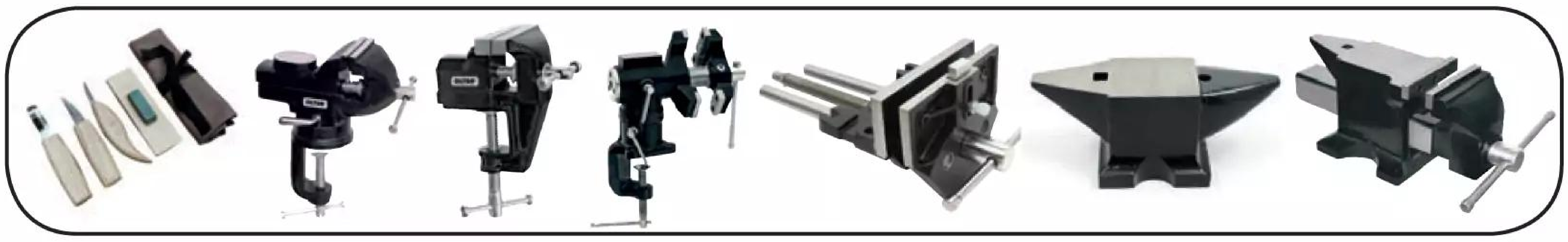

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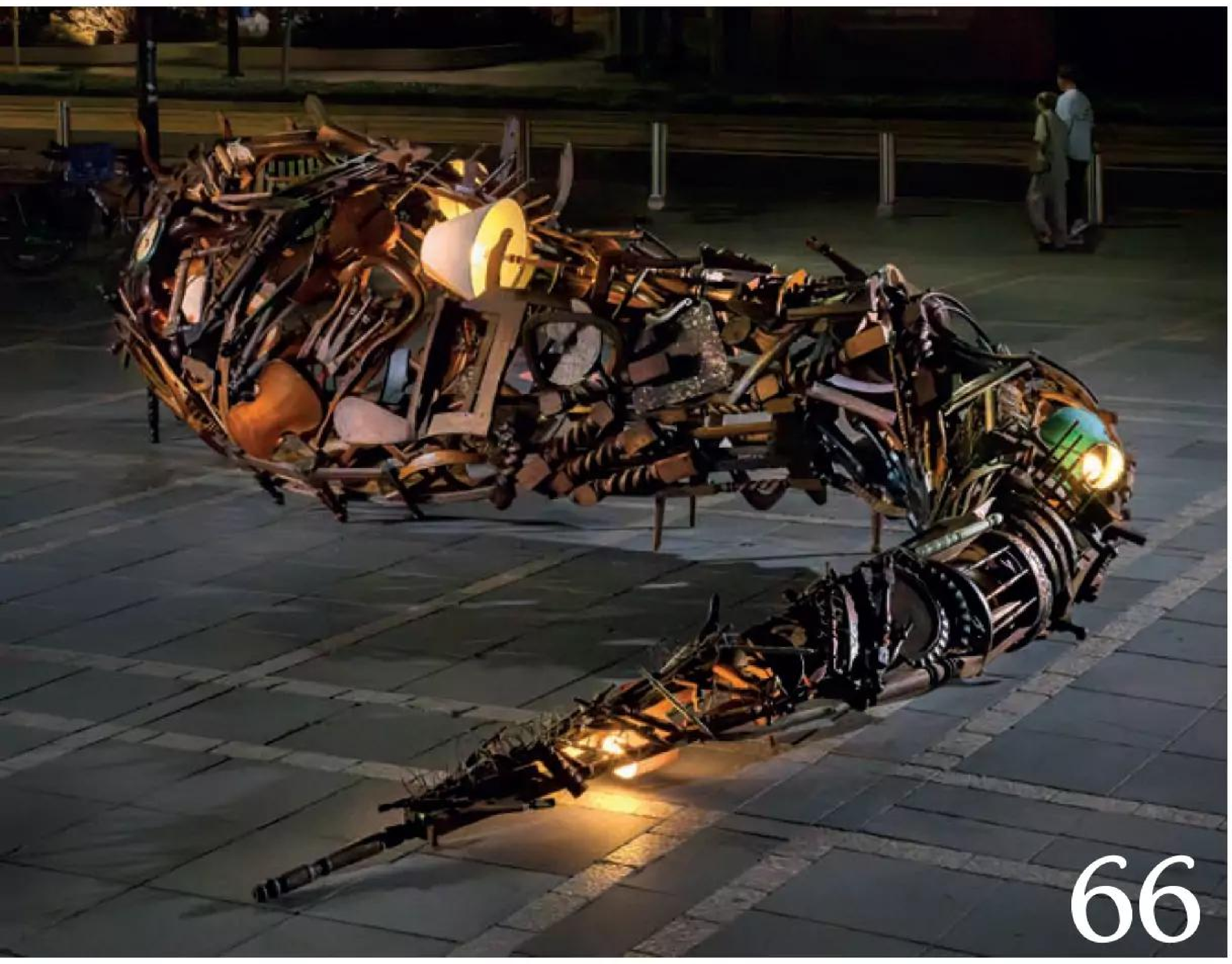

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Editor's Letter

Working with others is a theme that runs through this issue. *Written in Wood* is the name given to Kevin Perkins' exhibition of recent work. It's collaborative in the sense that Kevin takes inspiration from another Australian who is also often referred to as a national treasure – Richard Flanagan. And 'Flan', as Kevin calls him, also credits 'Kev' with influencing his attitude to better crafting his books. The work created by Kevin is a testament to an enduring friendship that speaks a uniquely Tasmanian language of shared experiences and inspiration. Read more from p.36.

Many hands

From p.66, Jono Everett writes about *Morphology*, a large public sculpture created in collaboration with Hannah Cheetham in Newcastle last year. Their idea was to metaphorically house the memories that derive from the 170 people and the countless discarded furniture components used to create the sculpture. Participants were encouraged to supply some of the parts and to inscribe their own messages, and lighting and a soundtrack were also incorporated. It's a monumental work which has also been shown in Canberra and now seeks a home.

Across cultures

The article titled 'Refractions' highlights another example of collaboration, this time across cultures and countries as Melbourne designer maker Adam Markowitz worked with furniture makers Phantom Hands in India. Technology and communications facilitated the first stages which came to fruition once the makers finally came together. See p.80.

Reading ahead

You need foresight and vision to be a woodworker. You learn to see potential in rough and weathered surfaces, and you learn to read the grain. Paul Barton sees beauty where others might see hopeless splits and cracks! Turn to p.48 to see how he creates his sublime *Vessel in a Vessel* with its seemingly 'impossible' matched inner form. Don't worry about making mistakes, says Paul who makes light of the challenges – but that's the secret of how he became a master.

Looking around

Some of our authors' words particularly speak to me. In an interview Réne Lebel says: 'When I'm designing a project, the goal is to turn off the woodworker part of my brain so I'm not thinking about how to make something, in an attempt to maximise creativity.'

For me, 'turning off my brain' is something that applies to not just designing, but also writing text and playing music. You can call it 'finding flow' or 'being in the zone', or perhaps at its most basic 'not overthinking it'. Réne's article is all about that and how he channels his environment into his designs.

In an even wider approach as a maker, Rex Kalehoff draws on past experiences and impressions to create a personal language of his own. He writes about his influences and details the making of his amazing sculptural *Fox Valet bench*.

Be part of Maker of the Year

Maker of the Year, presented by Carbatec is a competition for all woodworkers: amateur, pro and student. We've started a series of interviews with some of this year's entrants on our website. Sign up to our free fortnightly eNews to find out more. We'd love to share your work too, enter now at www.woodreview.com.au/moty.

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Tasmanian furniture maker Kevin Perkins (right) with author Richard Flanagan at Tasmanian Museum and Art Gallery

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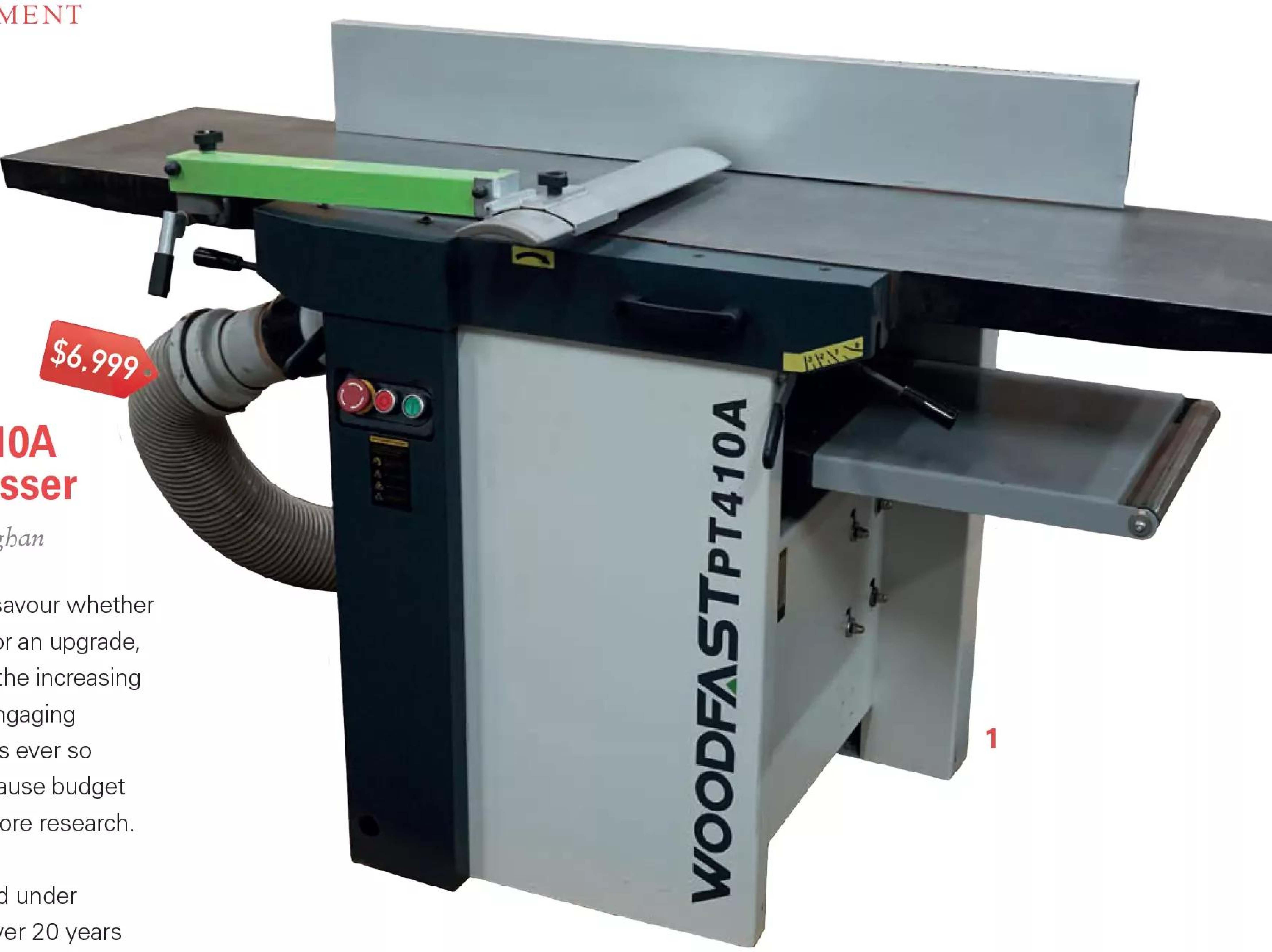

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Woodfast PT410A planer-thicknesser

Reviewed by Richard Vaughan

A new tool is a delight to savour whether it's a totally new addition or an upgrade, and the research through the increasing number of options is an engaging process. A new machine is ever so much more engaging because budget considerations demand more research.

My MiniMax 350 over and under had served me well for over 20 years but I was ready to upgrade and after researching the options I settled on the Woodfast PT410A (**photo 1**).

The Woodfast name was born in South Australia in 1941 but shifted focus to woodworking in 1944 with a 4-inch jointer and a 14-inch bandsaw. They were successful. Many will remember the Woodfast lathes that were the standard in many high schools way back when. The entire Woodfast range is now made in China with the distributor based in Western Australia.

The three phase motor is a useful 4kW (5.3hp) enabling the helical cutter block to plane up to 410mm wide and remove up to 4mm in a pass. The thicknesser dresses 405mm wide and 225 thick and can remove 3mm in a pass. And yes it can.

It weighs a no-nonsense 265kg and was delivered very solidly protected with ply and fixed to steel supports which were fixed to the pallet to ensure rigidity. On opening it was a relief to see it wasn't covered in protective gunk that is a pain to remove. I had been warned that it would need wiring, which seems to be standard nowadays for whatever reason, so I was prepared. Wired by a qualified electrician of course.

Attaching the robust outfeed support was just a matter of two machine screws. Attaching the jointer guard likewise is simple. Adapting for my dust extraction set-up involved a visit to the plumbing department (**photo 2**).

Switching between jointer and thicknesser is straightforward with both jointer tables moving as one. Levers at each end unlock and with one handle the tables lift and are locked into place (**photo 3**). The dust hood swings over and it too locks in place. A nice safety measure ensures the motor won't start unless the hood is properly in place and locked there for thicknessing.

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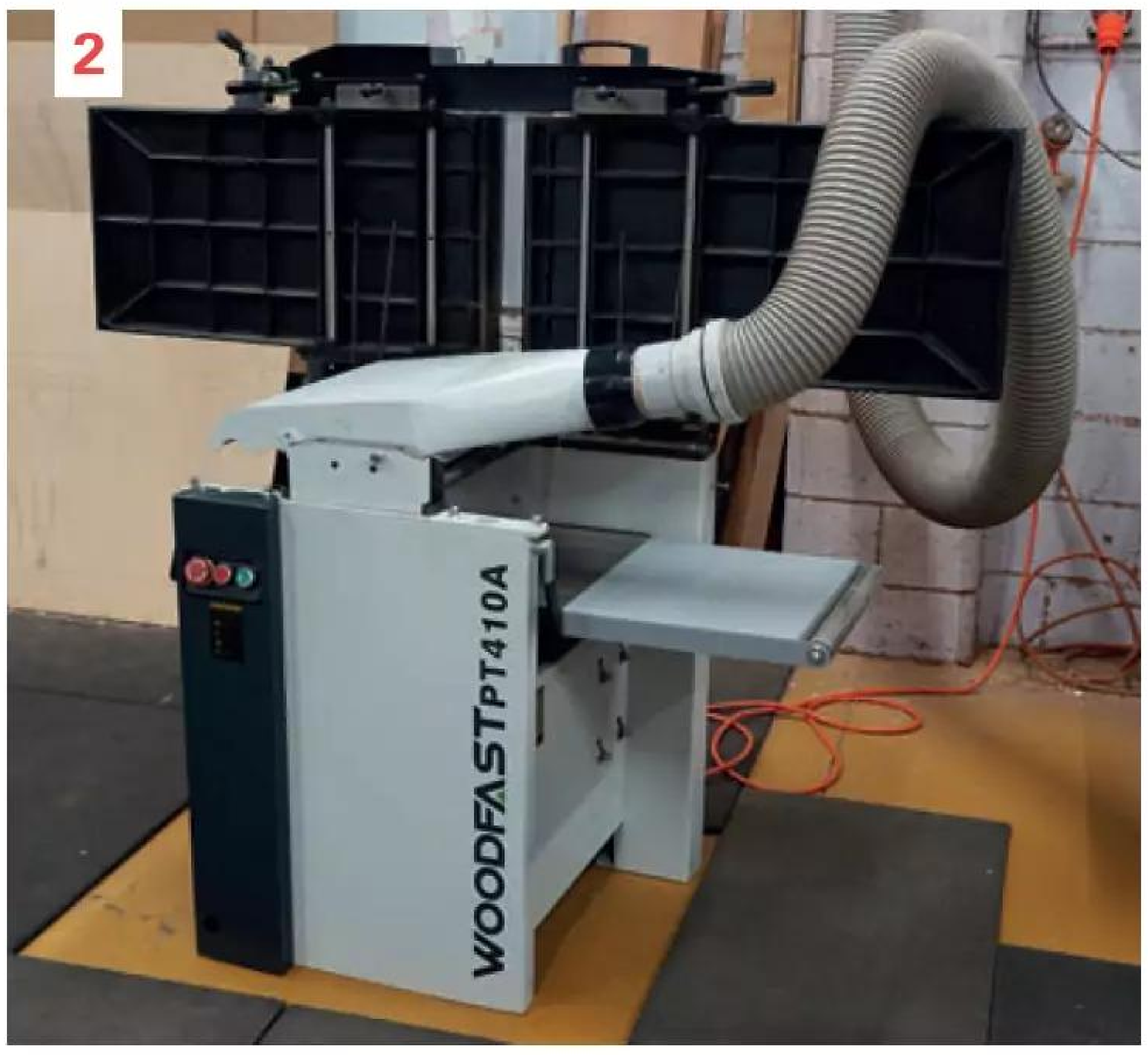

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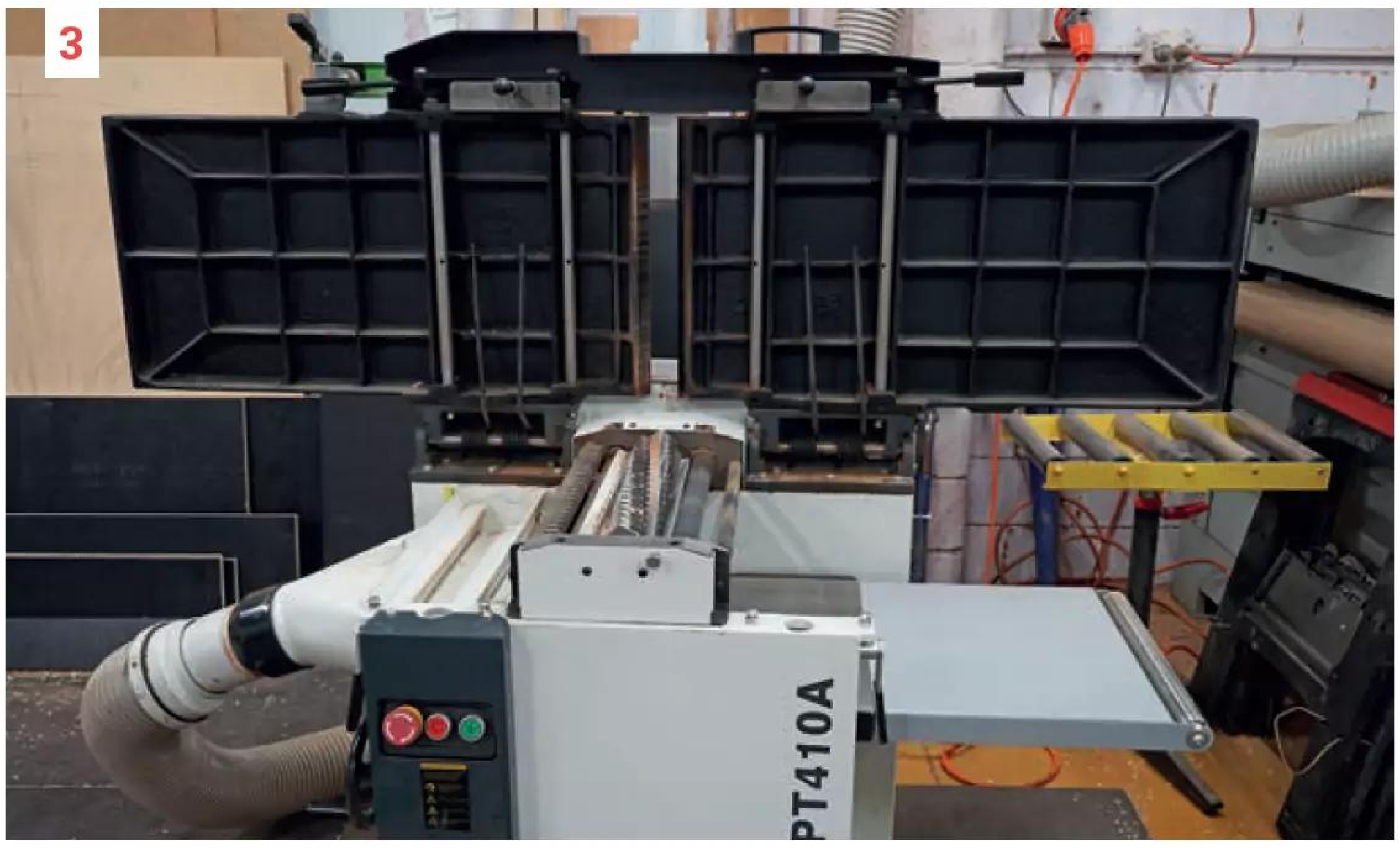

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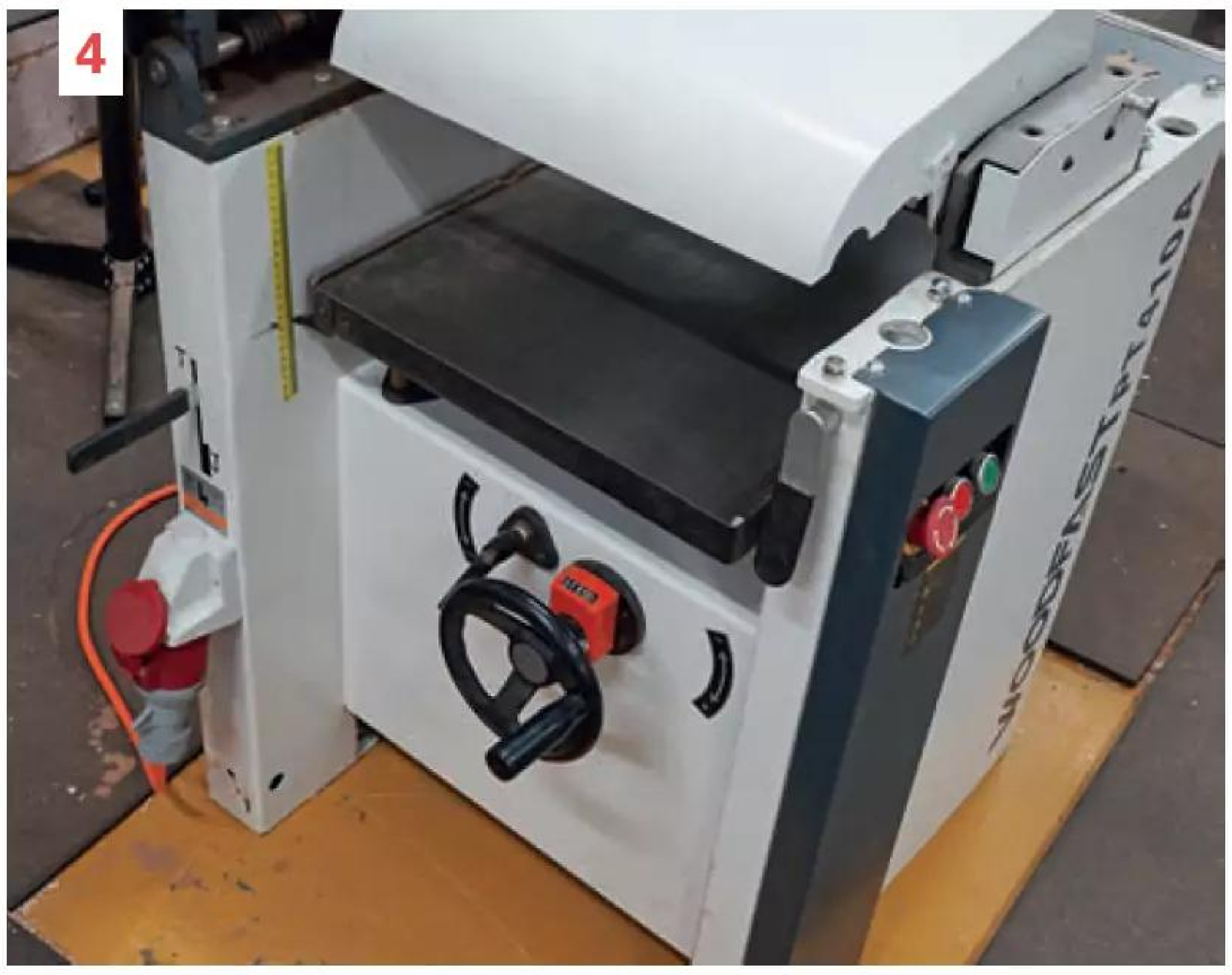

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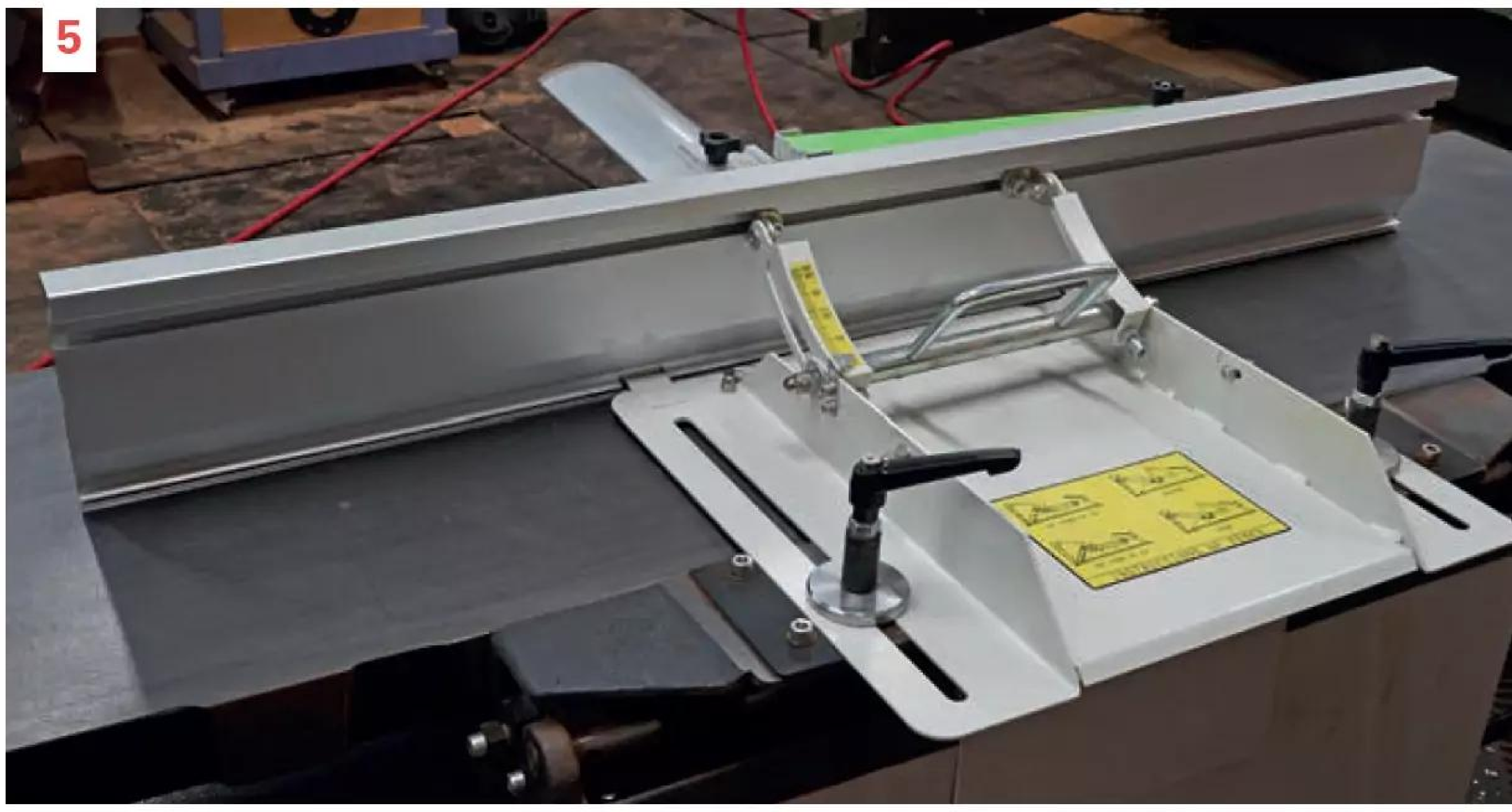

To switch back to planer mode the thicknesser table needs to be wound down to 155mm to accommodate the extraction hood. It is marked but I chose to highlight it for the benefit of students. I also highlighted the settings to engage the feed rollers for thicknessing for the same reason (**photo 4**).

The large protruding so-called emergency stop quickly became the preferred method rather than seeking the inset dedicated stop button. Another plus.

The safety guard over the jointer can cover up to 75mm, and more than that you just move it to the side. I'm accustomed to well used and well worn machine tables so the friction of these new and finely milled tables was a surprise. Doubtless regular application of paraffin wax or Siebereit with a scourer pad will deal with that over time.

Both the hefty milled cast iron tables and the extruded aluminium 1100mm long and 150mm high fence (**photo 5**) were true to my engineer's straightedge.

After several months in use I can say that this machine is excellent. The outfeed extension is a deal maker and I wonder why it isn't a standard option for all machines, combination or thicknesser only. We've all had to make do in various less than convenient ways and this is so simple and effective.

Woodfast machinery is distributed by Beyond Tools, www.beyondtools.com

Machine supplied by Hammer Roo, see www.hammerroo.com.au

Photos: Richard Vaughan

Richard Vaughan is a Brisbane based designer maker who also teaches woodworking classes. See www.richardvaughan.com.au

1. Jointer in situ and working. The calibration of how much is being removed is basic but generally that exactness is not really required. The tables were perfectly set on arrival and jointed two one metre board edges for a no-gap join on first use.
2. As a thicknesser, showing outfeed table and extraction adaption.
3. Tables up, showing counterbalance springs. Previous outfeed support in background. End of the tedious need to adjust the height of the stand for changing thickness.
4. Calibration to 0.1mm is rapid and smooth as one full turn adjusts by 4mm. The measurement was 0.5mm out on delivery but the simple adjustment method is available online. Thousands of dollars more would buy a machine with dial-in digital accuracy and powered rise and fall that I have coveted, but my budget was content with economical accuracy.
5. The fence angle is easily calibrated using a 6mm allen key and 12mm spanner to stop at 90°. It can tilt from 90° to 45°. The calibration for less than 90° is basic requiring a sliding bevel or angle guide to set the angle. Positioning the fence is smooth as is the tilt adjustment. No frills, it simply works.

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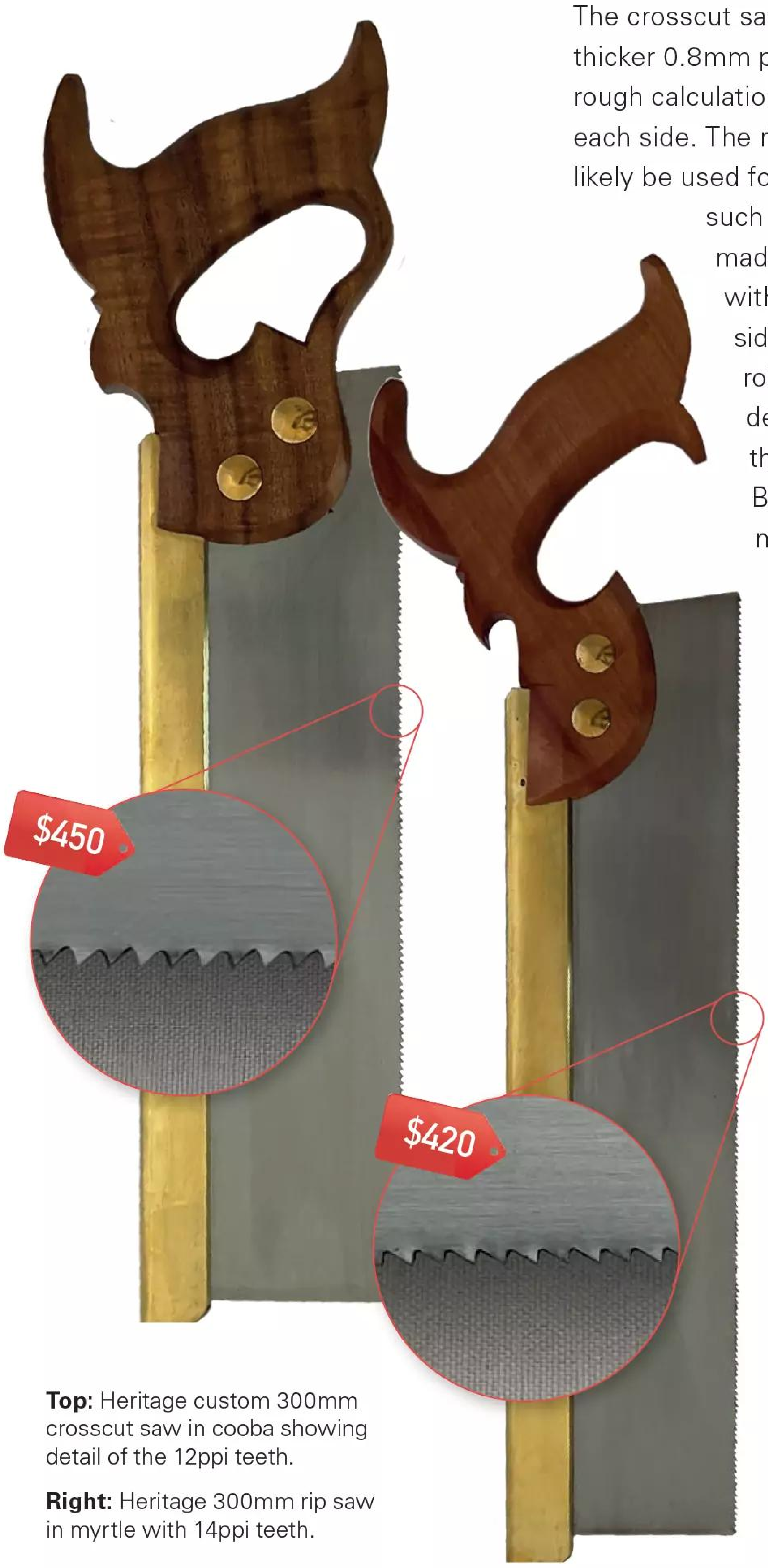
Heritage Rip and Crosscut Backsaws

Reviewed by Robert Howard

When I first worked as a furniture maker back in the mid-1980s, the best new dovetail saw I could buy was a 200mm, 19tpi Spear and Jackson saw, with a very ugly, red painted handle. I stripped the paint off the handle, and reshaped it to something I could live with, and used it long and often enough to have my fingerprints still visible on the handle today.

How things have changed. My choice then was easy, whereas a furniture maker today must choose from a wide variety of excellent saws, ranging from large enterprises such as Lie-Nielsen and Veritas, all the way down to small custom shops such as Heritage Saws in Melbourne.



Top: Heritage custom 300mm crosscut saw in cooba showing detail of the 12ppi teeth.

Right: Heritage 300mm rip saw in myrtle with 14ppi teeth.

The two Heritage saws I have before me are a 300mm, 12ppi crosscut saw with a Kingston pattern, closed handle made from figured cooba, and a 300mm, 14ppi rip saw, with a Fitzroy pattern, open handle made from Tasmanian myrtle.

The crosscut saw has a slightly thicker 0.8mm plate, with, by my rough calculation, about 0.1mm of set each side. The rip saw, which would likely be used for more delicate work such as cutting dovetails, is made from 0.5mm plate, with slightly less set each side. The thicker, more robust plate is also deeper (63mm) than the thinner plate (53mm). Both saws have backs made from folded, 3mm brass, but the closed handled crosscut saw feels significantly heavier than the open handled dovetail saw, even though the difference is only about 10grams (60 vs 50g).

Saw nerds might be interested to know that the dovetail saw has a higher hang angle (that is the angle between the line of the force you apply perpendicular to the back of the handle, and the line of the teeth) of 41° compared with the crosscut saw's 23°. This difference is not unusual and is only one of many variables that sawmakers consider in making a custom saw to meet your needs. As an interesting aside, my old Spear and Jackson dovetail saw had a closed handle with almost the exact same hang angle as the cooba handled crosscut saw, while a very old, Moses Eadon dovetail saw I own, that must date back to the early 1800s, has the same hang angle as the myrtle dovetail saw.

Attention to detail is evident everywhere on these Heritage saws, from the closed, polished ends of the brass backs, to the beautifully detailed and finished handles and the stamped production number on the bottom of each handle.

Finally, and most importantly, they both cut fast and straight. The smaller teeth on the 14ppi ripsaw were noticeably smoother than the larger 12ppi crosscut teeth, and, as ripsaws are better at crosscutting than crosscuts are at ripping, it would be my choice if I had to choose between them.

These saws are custom made to order, so if you are interested in owning one you will enjoy the luxury of choosing the style of saw, the wood for the handle, and all the technical specifications that will give you a saw designed to your specific needs.

We are very fortunate to have saws of such high quality made here in Australia, and I urge you to seriously consider them if you are looking for a good saw.

Review tools supplied by and available from Heritage Saws, see www.heritagesaws.com.au

Robert Howard @roberthowardwoodworker is a woodworker who teaches woodcarving classes from his workshop in South Brisbane, see roberthoward.com.au

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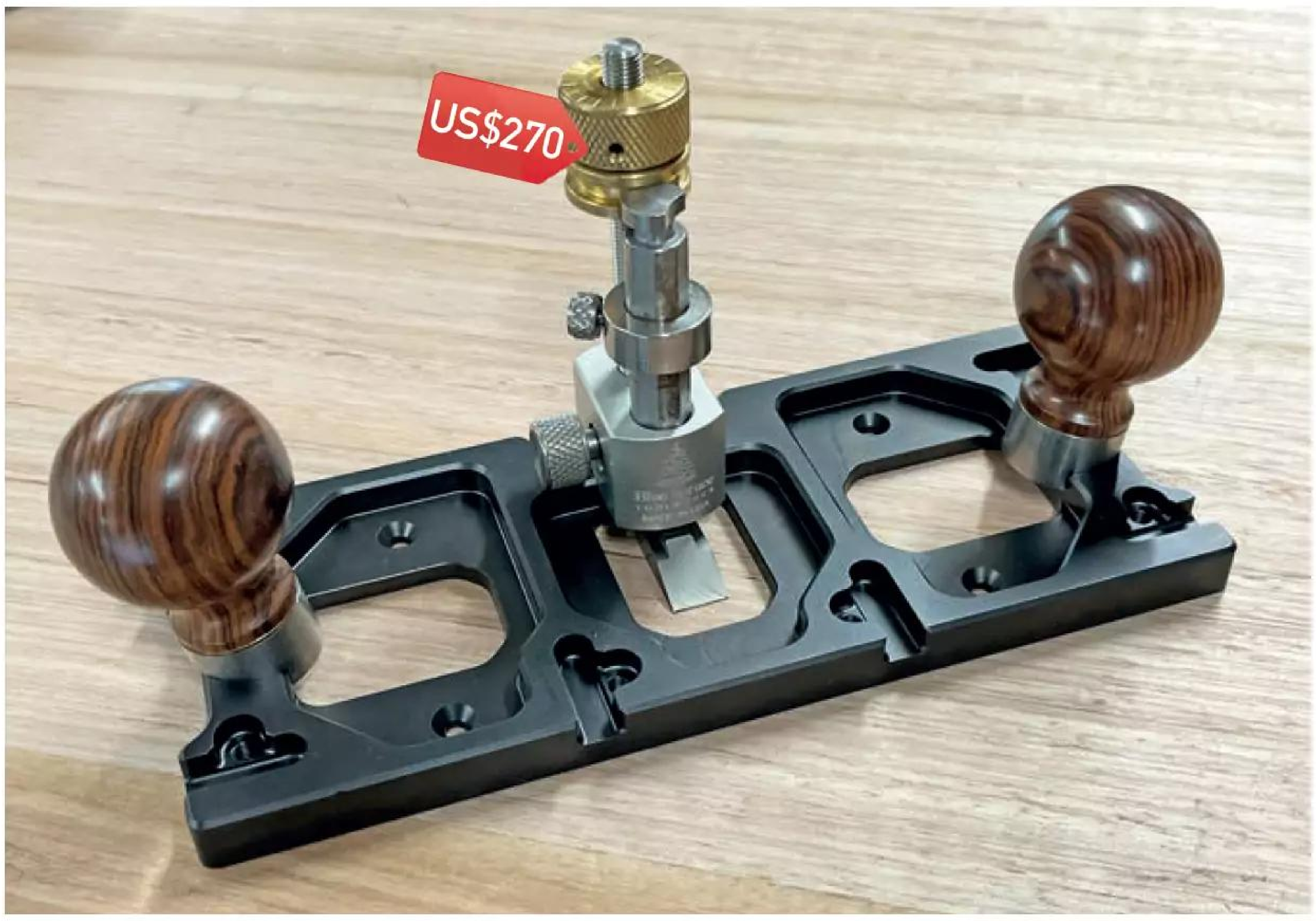
Blue Spruce Router Plane

Reviewed by Raf Nathan



This router plane comes badged as Blue Spruce Tools but is made in the Woodpeckers factory in the USA so you can expect quality. It arrives as a set of components, however it's not a big job to screw the handles and blade assembly in place.

The design is based on the Preston router plane made from the 1800s to 1934 in the UK and its footprint is about the same at 216 x 90mm. Blue Spruce have improved the blade holding system immensely.

The base is milled from ductile iron with a nitride finish for protection against rust although initially some of this paint left residue on wood surfaces. All other parts are stainless steel, brass and aluminium.

The lovely Bolivian rosewood handles mount in different positions to enable the tool to be used in a few different ways. The blade holder is very precisely made with a top-mounted brass thumbwheel controlling rise and fall of the blade. In use there is zero back-lash which is very impressive.

The blade holder assembly is a smart piece of engineering. The blade screws to a column which rotates for different set-ups. To remove the blade, activate the spring-loaded depth screw knob, turn the column and pull it down and out. Or unscrew the blade from the column. It is quick to do either.

The 1/2" blade comes perfectly ground at 25° but the edge is not honed so you need to work it to get it sharp. Arguably, for the price it should come ready to work out of the box.

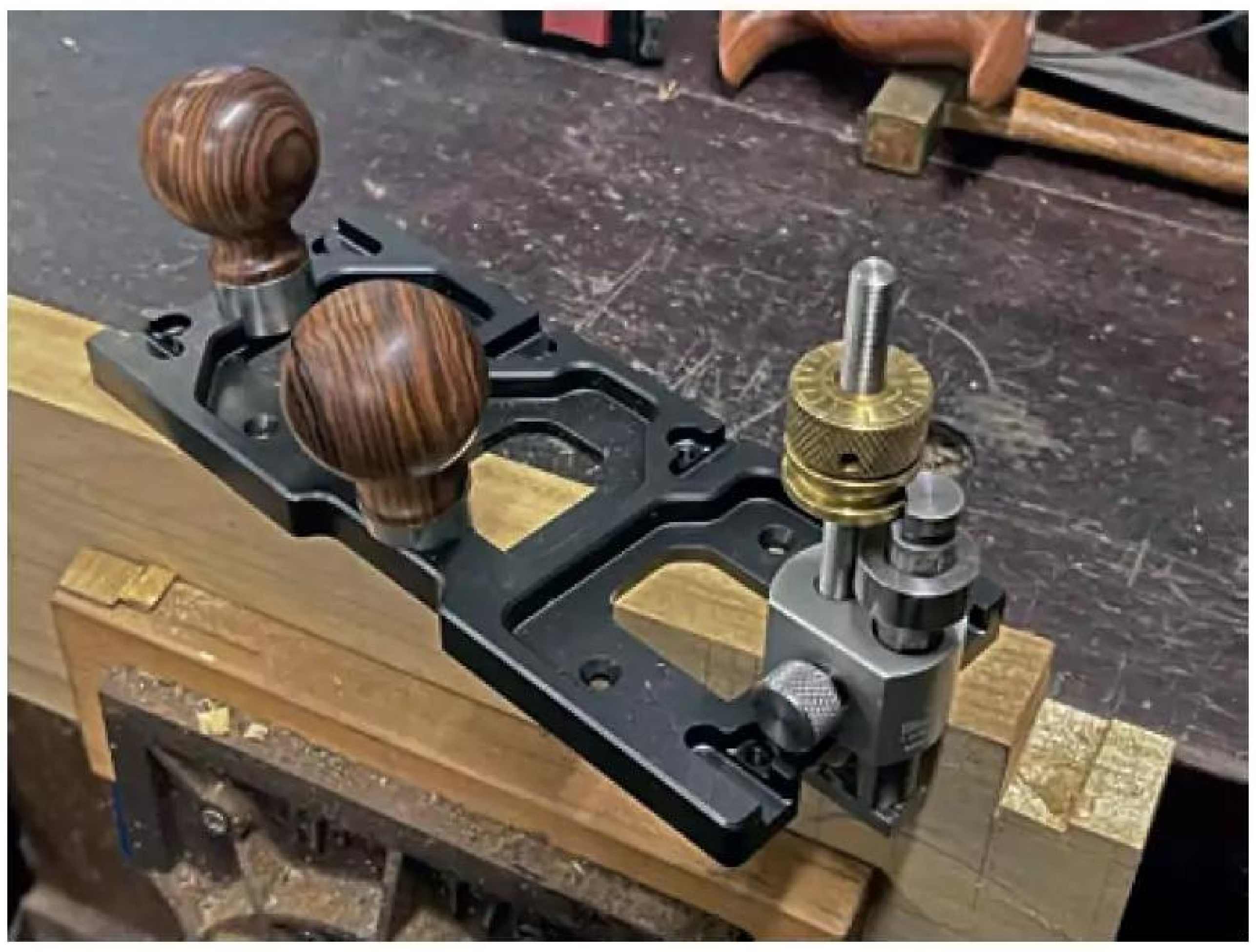
The back of the blade is perfectly flat and lapped to a mirror finish. It took me a while to hone the edge through various grits to achieve a razor edge using a slight secondary bevel. All without touching the mirror polished back. Initially I thought the blade was O1 steel given its hardness, however after using the plane for a while re-honing the edge was easy. In fact the blade is A2 and just needed the case hardening from the initial grinding removed with the initial hand sharpening. A spear point blade is also included.

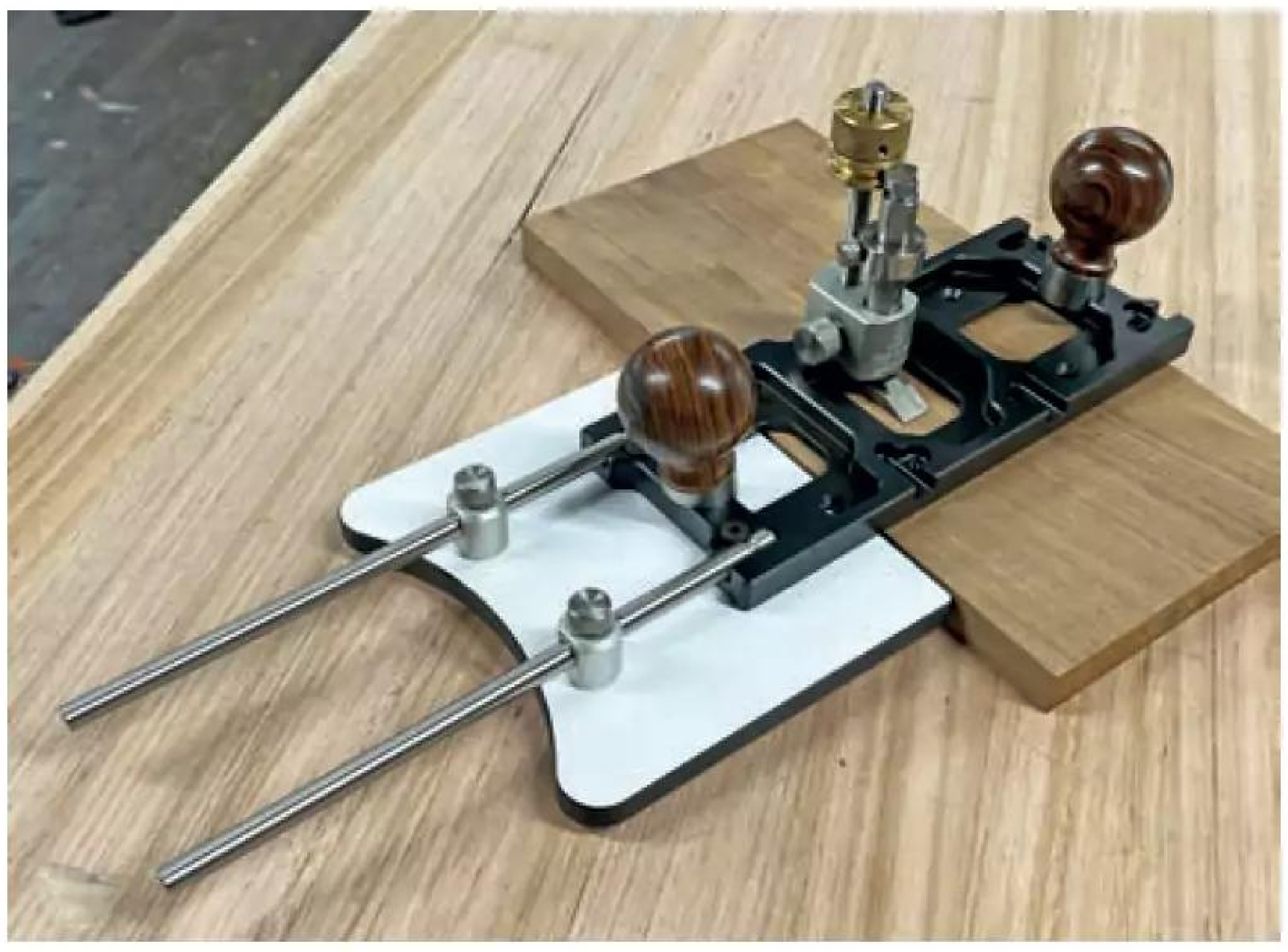
Given the refinement of the plane, the fence seemed somewhat of an afterthought. The phenolic fence plate attaches to the base via twin stainless steel rods and has knurled lock knobs. I could not get the fence to sit perfectly parallel with the blade so if it was mine I would need to ease a hole in the plate for more adjustment, a quick fix. It's a bit slow to install the fence as it secures with two allen screws that are hard to access as they sit under the handles.

The plane works beautifully and achieved all you would expect. With the blade and handle in different positions the plane works to keep as much of the base on the work surface when planing. The build quality is very high throughout the tool, it will last forever.

Apart from antique tools this is the only plane of this large Preston style available and Blue Spruce have made an impressive one.

Review tool supplied by Blue Spruce Toolworks bluesprucetoolworks.com Blue Spruce tools are sold in Australia by Carbatec, see www.carbatec.com.au





Top: Modelled on the Preston design, the Blue Spruce router plane has a 216 x 90mm base.

Left to right: Showing an alternate mounting for the handles and blade.

The fence plate attaches via stainless steel rods with knurled lock knobs.

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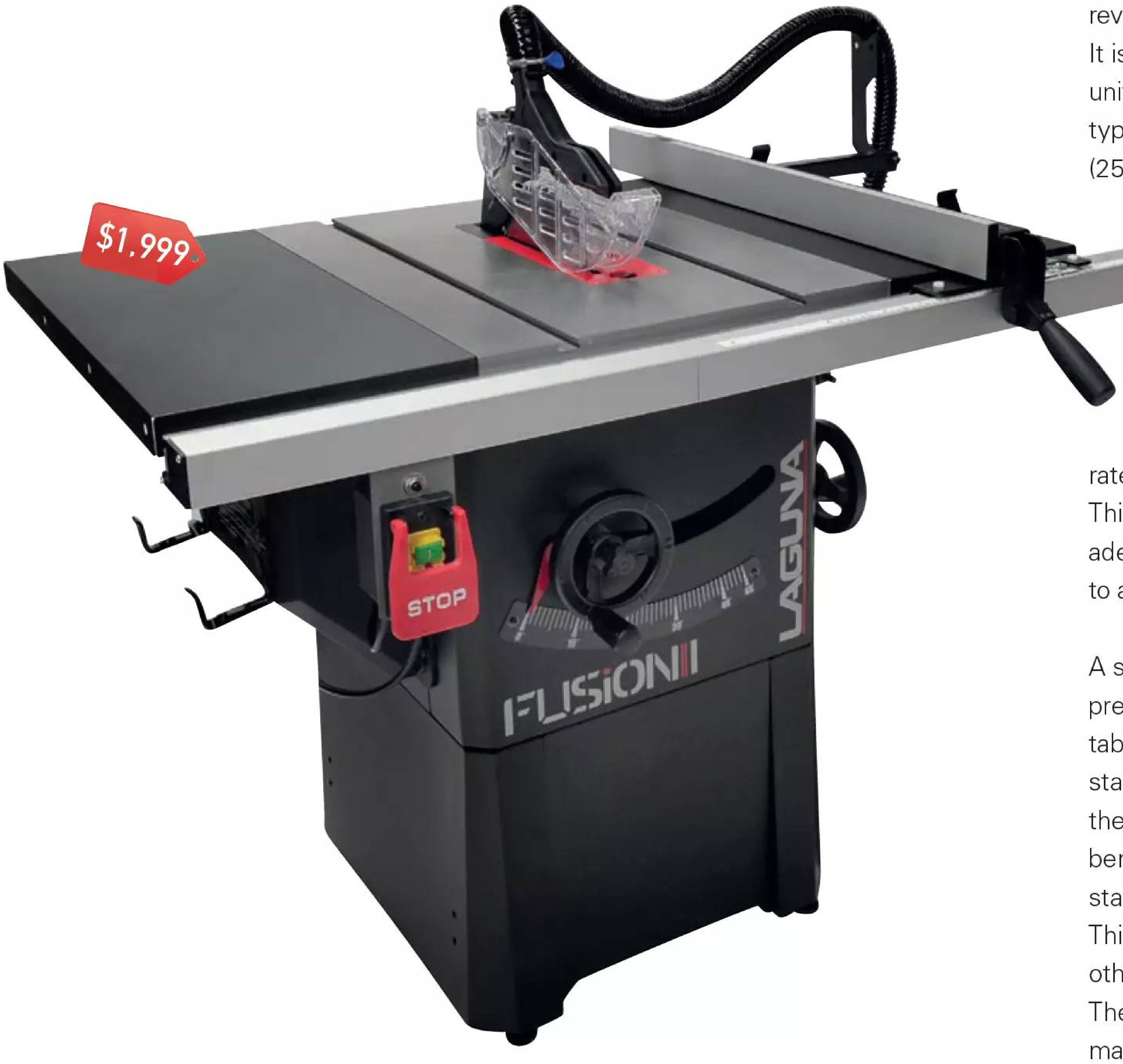
Laguna Fusion 1 Tablesaw

Reviewed by John McBratney



The Laguna table saws have been around for several years and have been recently upgraded. The Fusion 1 model, reviewed here, is the smallest of three. It is however a thoroughly high quality unit albeit on the smaller end of its type. The blade is 10 inches in diameter (254mm) and comes with a TC tipped 60 tooth general purpose tooth pattern. The arbor diameter is 0.62 inch (15.87mm) and it can accept a dado stack of up to 0.75 inch (19.05mm). The motor is rated at 1.5hp or just over 1100 watts. This arrangement has proven entirely adequate for fine cuts of hardwood up to around 7850mm.

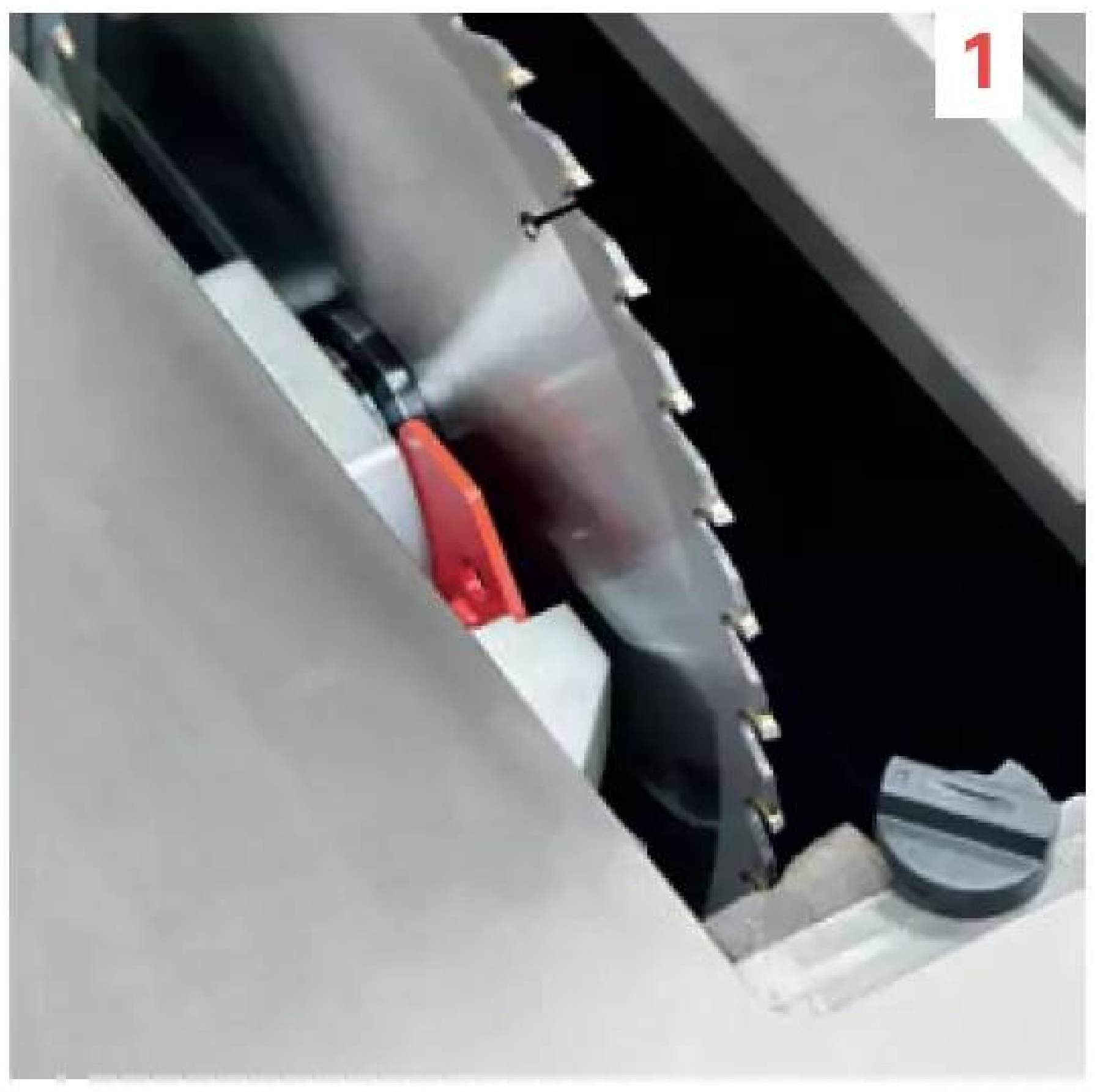
A significant feature of the unit is its precision ground and polished cast iron tabletop. The top has two T-tracks of standard (US) size, one on each side of the blade. The casting has deep webs beneath it which provide for a very stable surface over a long period of use. This tabletop is vastly superior to many others that use pressed steel surfaces. The tracks are perfectly parallel – I have made a cross-cut sled for it and it is most successful.

The motor and blade assembly is mounted on a cast aluminium trunnion of a heavy construction ensuring accuracy and repeatability of cuts. The tabletop fence is also solid and securely fixed at both ends once adjusted to the desired location. I found accuracy of the fence, blade and tracks to be excellent – out of the box. Power to the unit is 240 volt, single phase and it can be run from a standard GPO socket.

The motor clearly is fitted with very high quality bearings; this is demonstrated by the long slow-down time upon switching it off. The last third of the slow-down time is virtually silent so it is essential to be most careful on turning off. I suggest watching the blade and refraining from moving the work or touching any control until the blade is stationary.

The Fusion 1 has a blade guard fitted with a quick-change mechanism, also used for

1. Easy access for blade changing using simple fixed lever shown left in photo.
2. Large angle tilt motor/blade mount, showing internal dust collection hose.
3. The lever locks both ends of the fence.
4. Blade height and angle adjustment wheels – the height wheel is at the front.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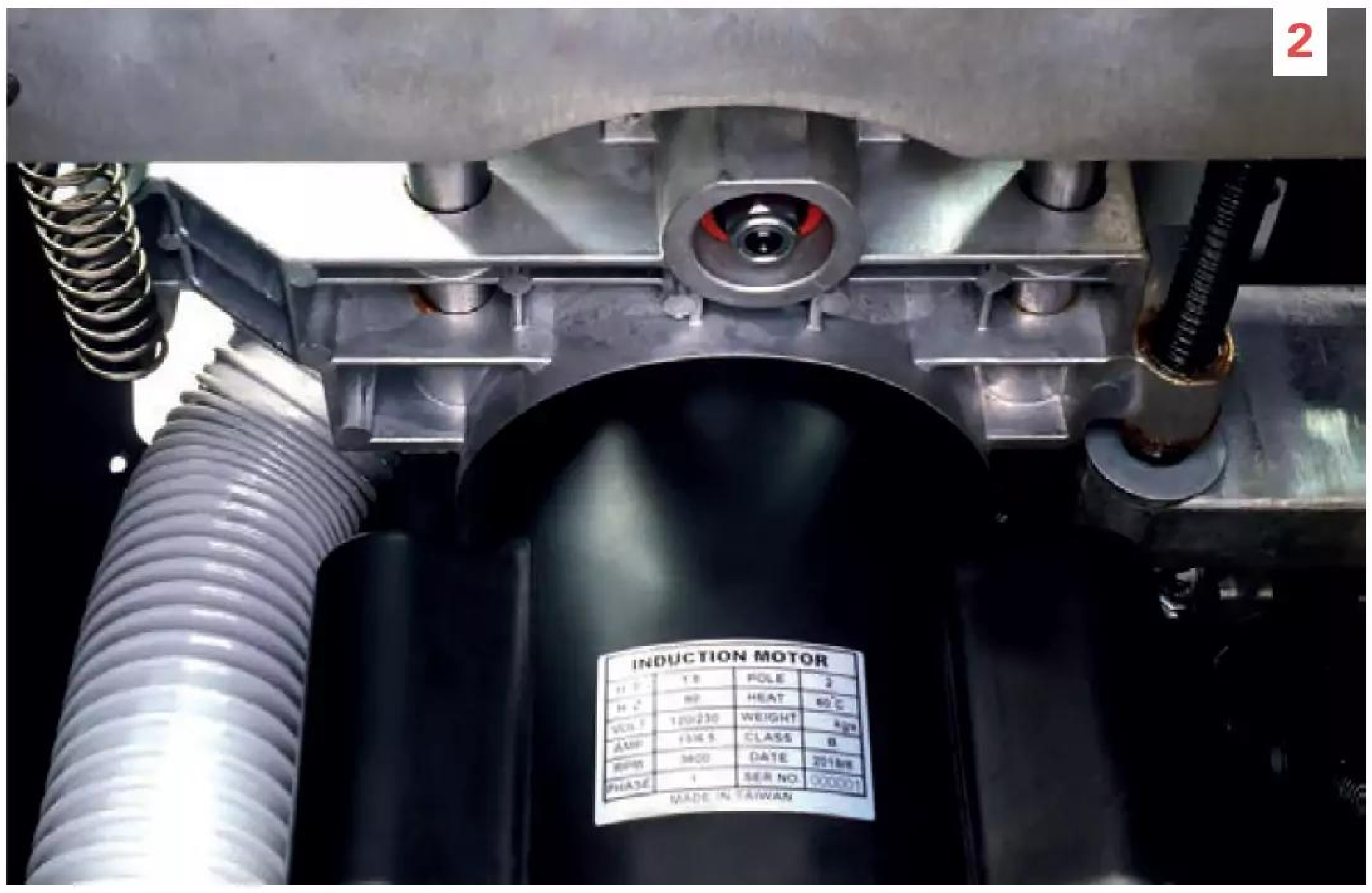
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the riving knife – no tools are needed, a simple lever frees both at the dust hose from the blade guard and connects to the 4 inch (100mm) diameter dust port at the rear of the lower cabinet.

The Fusion 1 is supplied with quite a good mitre gauge, a push-stick and several small tools. There is a hanging rack for these on one end.

Assembly was very difficult with one person – out of the box the top section is extremely heavy. The total weight once assembled is 88.5kg, and most of that is in the top section. I had to use a 5:1 pulley to lift it out of the box and place it over the bottom section as it was screwed together.

My one criticism regarding assembly is that the bolts connecting the top and bottom section are *very* hard to insert and apply the washers and nuts to. I had to make a special bolt holder, (10mm dowel, hole in the end, tap washer spigot inserted and double-sided tape on the washer) and ask my wife to put the nuts on. Some access holes in the side of the lower case would have helped considerably.

Regarding weight, it is heavy, but this ensures stability in use. If, however, a user needs to move it regularly, say in a small workshop, Laguna fold-down wheels for one end are available as an extra. I do recommend that during assembly one has a second pair of strong hands. It is assembled with the tabletop down, so it must be placed on a blanket or other thick, soft material to prevent damage. Turning it over must be done very carefully and here my use of a pulley fixed to my workshop roof beams was both a safe process and ensured it did not overbalance and fall on its side. Great care is needed in safe handling during assembly, to avoid personal injury and damage to the machine.

In use I have found this machine to be excellent. It is accurate, the blade is parallel to the fence (without my having to adjust it) and the on/off switch may be located anywhere along the left hand side of the side rail. It is at a good height to activate the off button (a large red lever over the actual button) with a knee if necessary.

There is one minor deficiency in that the dust collection is mediocre. The hose from the blade guard top is around 30mm diameter connected to the 4 inch dust port. One needs quite a large dust extractor vacuum to make this work satisfactorily. I have adapted my Festool dust vacuum to the 4 inch port but dust still collects around the machine in use. A small annoyance that does not detract from the machine's overall very good performance.

For the money, I consider the Fusion 1 a very sound investment for a small to medium sized workshop.

Laguna machinery is available from Carbatec, see www.carbatec.com.au

Photos supplied by Carbatec

3

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LAGUNA
FUSION1

John McBratney is a retired telecommunications engineer that now makes furniture for friends and home. He specialises in tables and cabinets but also makes small boxes. He likes cutting dovetails by hand. He lives in Lancefield, Victoria and has a well equipped workshop in his back yard.

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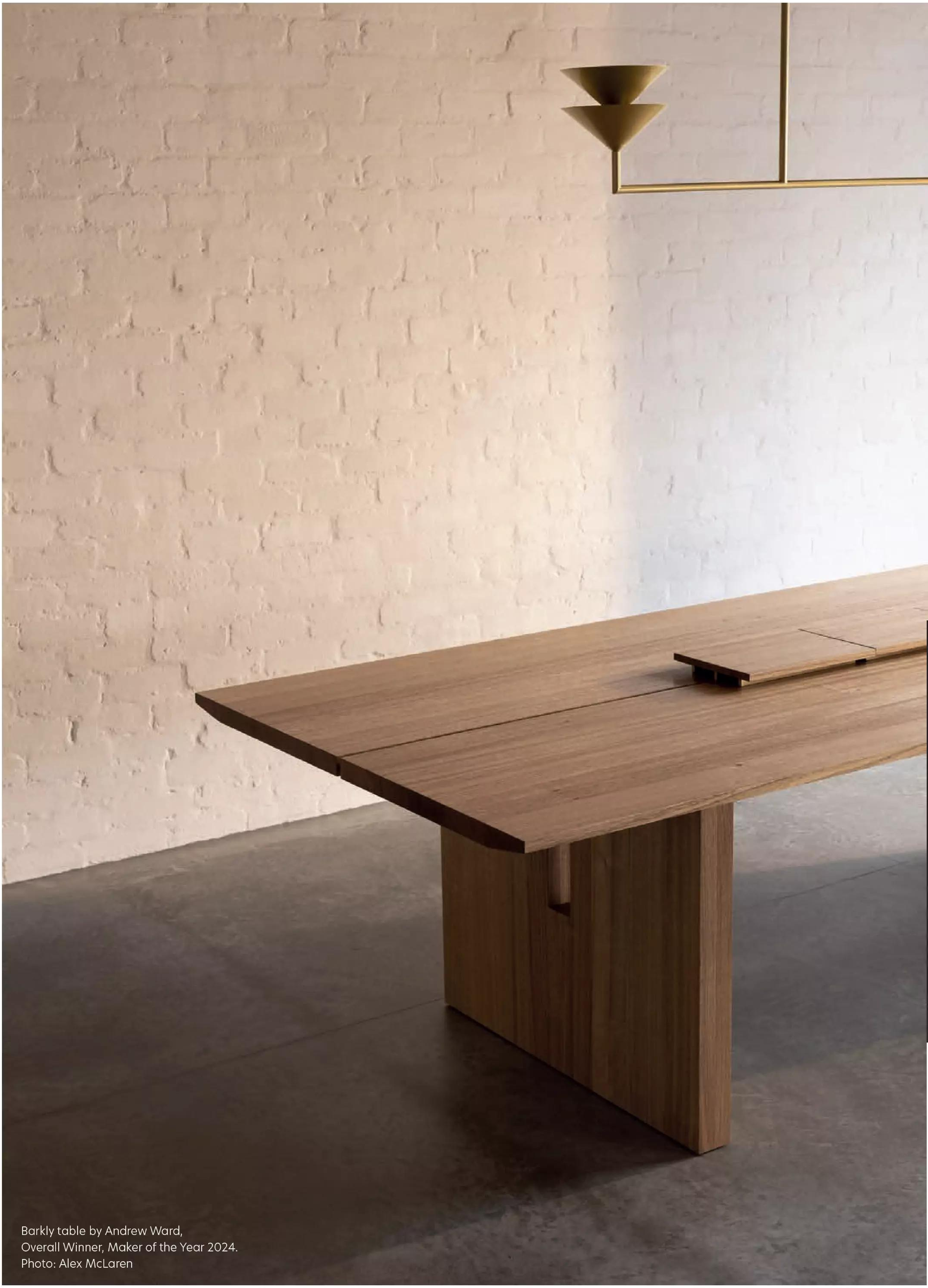

Barkly table by Andrew Ward,
Overall Winner, Maker of the Year 2024.
Photo: Alex McLaren

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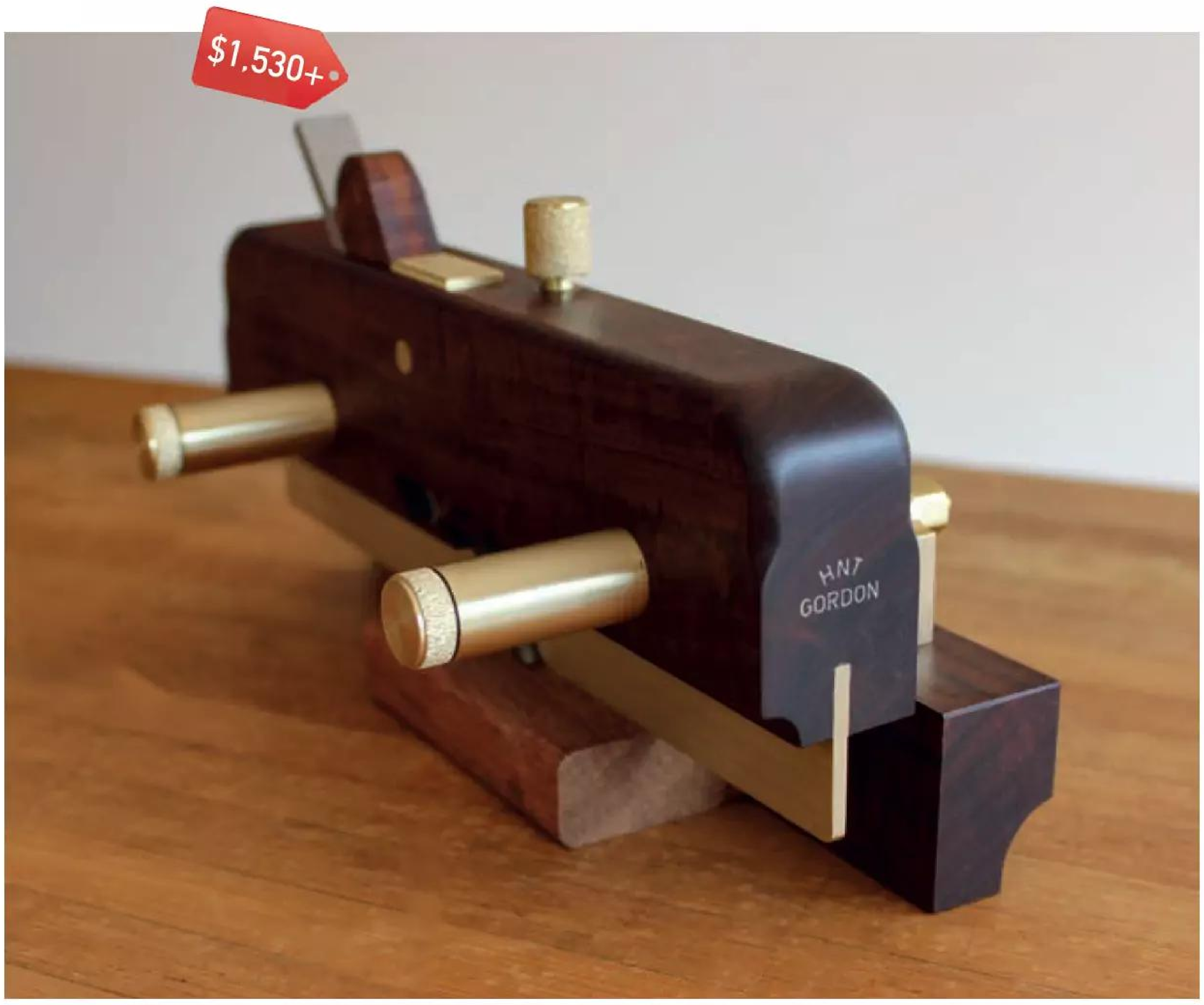

HNT Gordon Plough Plane

Reviewed by Damion Fauser

Australian toolmakers HNT Gordon have a well-established heritage for designing and making functional planes that are also aesthetically exquisite. Their new plough plane is no exception. I've had one for several months now and eagerly anticipate opportunities to put it to use in my projects.

This plane is designed to cut clean and accurate grooves in long grain, making it very versatile – think of your own grooving requirements for box lids/bases, drawer bottoms, sliding door tracks, frame-and-panel assemblies and inlays.

The build quality is apparent, featuring elegant curves, soft detailing and a lovely finish that is just a joy in the hand. The brass working and adjustment elements are subtle, well-polished and contrast beautifully with the timber.

It measures 228mm long and 120mm high. Width varies depending on the fence setting. The tool has significant heft – my pink ivory model weighed in at 1286 grams with the 1/4" blade installed, allowing significant momentum in the cut.

This is a fully adjustable, highly functional tool. Grooves can be cut up to 42mm from the reference edge, in a wide range of widths. It comes standard with a 6mm or 1/4" blade, and a good range of additional blades are available.

The blade is O1 tool steel hardened to RC 60–62. Custom blades are available, however 1/8" is the narrowest possible due to the thickness of the skate, which is just under 1/8" for clearance.

Setting the tool is simple, but critical to accuracy and ease of cutting (as for any plough plane) is that the fence is set perfectly parallel to the plane body. The fence arms come with metric and imperial scales and operate independently, allowing for micro-adjusting.

The fidelity of the scales is 1mm for metric and 1/32" for imperial. I use the scale as an approximate location and then use my digital calipers to really dial in the setting at the front and rear of the fence. Using the knurled knobs, I've found it's best to alternate small adjustments on each arm to move the fence over any distance.

Depth of the cut is easily adjusted with a knurled knob on the top which positions the brass depth stop skid relative to the bottom of the skate. This depth can be set easily enough by measuring with a ruler from the bottom of the skate to the bottom of the skid. The maximum depth of cut is a very generous 16mm. The skate is a narrow yet sturdy and durable brass bar.

The blades are secured with a matching timber wedge and adjustments to cut depth are easy. When setting the blades, the edge of the tool is set against the foot of the depth stop – this ensures the correct alignment of the blade either side of the depth stop and essentially calibrates the scale on the fence arms. The blades are long, have parallel sides for easy sharpening with common honing guides and are nice and chunky at 5mm thickness, basically eliminating any chatter. The blades run in line with the body of the tool, meaning that the cutting edge is square, making sharpening potentially easier for those not familiar with sharpening skewed-edge tooling.

The outside of the fence has a clever hollow-curved profile from end-to-end, providing a comfortable surface for your fingertips to apply the right pressure to keep the fence registered appropriately.

Quite simply, this tool is an absolute joy to use. It has magnitude and mass without feeling cumbersome, has just enough soft surfaces and details to be comfortable to hold for extended periods and wow, does it power through the cuts, leaving clean and crisp grooves.

A standard tool in gidgee, with one 6mm or 1/4" blade costs $1530, with each additional blade costing $80 each. A wide range of timber species is available for the main body of the tool. For those who delight in hand cut joinery, the functionality and versatility that this tool offers make this exceptionally good value. I look for opportunities to use mine, and I know you will too.

HNT Gordon handplanes are available from hntgordon.com.au

Damion Fauser is a Brisbane based designer maker who also teaches woodwork. See damionfauser.com

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Gilly's Chopping Board Oil

Reviewed by Raf Nathan

You can use common cooking oil for cutting boards with good results, but if you are wanting to retail your work you want it to look as best as possible.

These oils are from local polish maker Gilly's, who say these products are 100% natural and food safe, and prevent cracking, although I cannot vouch for these claims yet.

There are three versions: lemon, orange and citrus with added beeswax. They come in 100ml bottles at $20 each.

I trialled two of these oils on both Huon pine and hardwood cheeseboards. Whilst the oils are slightly aromatic they only give the slightest hint of that odour so there's no need to worry about overpowering smells. My preference was the citrus and beeswax which is not an oil but a slightly thick paste. All product was applied easily and quickly by buffing them into the wood with a lint free cloth.

You can re-apply as many times as you want but I thought one coat sufficient to give a silky smooth finish on the wood (which people love) while highlighting the grain sufficiently.

After a few days I noticed the look was still fresh and the boards still retained the silky feel.

I would estimate 10 average sized boards could be polished from one bottle giving one coat only. For endgrain boards you could need more per large board.

Gilly's also make a food safe wax from beeswax and carnauba without the above oils.

Review product supplied by and available from www.gillysaustralia.com.au

Raf Nathan @treeman777 is a Brisbane-based woodworker.

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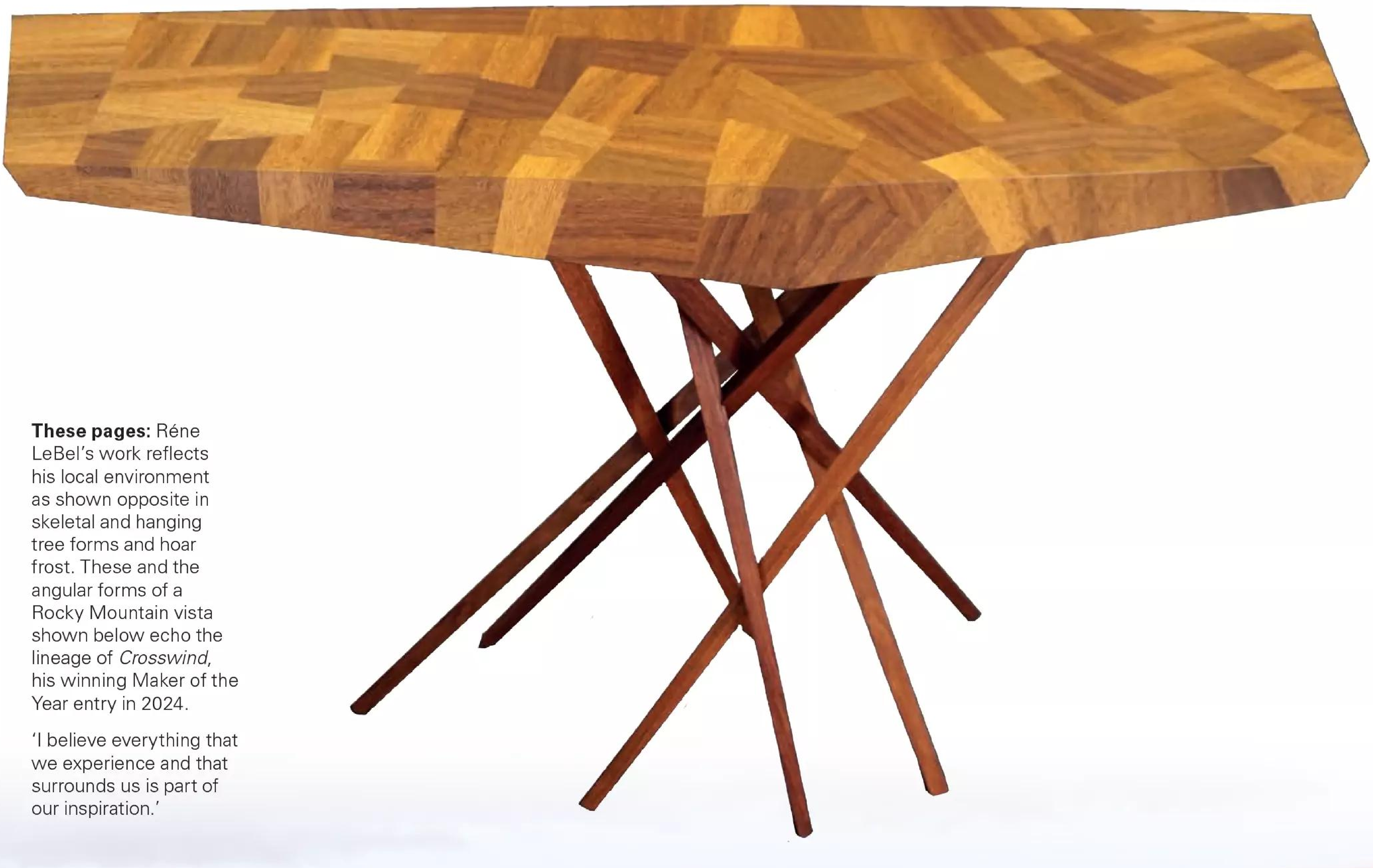
A Touch of Art

‘Forgetting’ stereotypical forms, taking inspiration from the local environment, and working methodically to achieve ‘random’ patterns are just some of the design and making processes used by Canadian woodworker, Réne LeBel.



These pages: Réne LeBel’s work reflects his local environment as shown opposite in skeletal and hanging tree forms and hoar frost. These and the angular forms of a Rocky Mountain vista shown below echo the lineage of *Crosswind*, his winning Maker of the Year entry in 2024.

‘I believe everything that we experience and that surrounds us is part of our inspiration.’

Réne LeBel lives in the Canadian Rocky Mountains. Last year, his piece *Crosswinds* was the winning entry for the Recycled & Rescued category, Maker of the Year Awards. Réne has two workshops. One is for his day job as a bespoke maker, the other is a compact home workshop for his personal projects.

At home he explores a range of forms and processes inspired largely by his local environment and the materials at hand. We asked him about his work, and in particular about the complex furniture he builds from 'random' endgrain glue-ups.

With countless blocks of wood combined for endgrain tables and 'cubes', is it about dealing with waste, the challenge, or for the Zen of it?

Although I'd made endgrain countertops for clients before, the first time I discovered the potential of this work was about 10 years ago. We had armfuls of offcuts at the shop that were 18–20mm square and 2.5m long that I ended up gluing up into a tabletop. Since then I've been exploring further. It's a wonderful way to use up scraps and offcuts and the beauty of it is that I can 'grow' them to virtually any thickness, width and length. So yes, it's about dealing with waste but there are also interesting challenges of aesthetics and making the structures work.

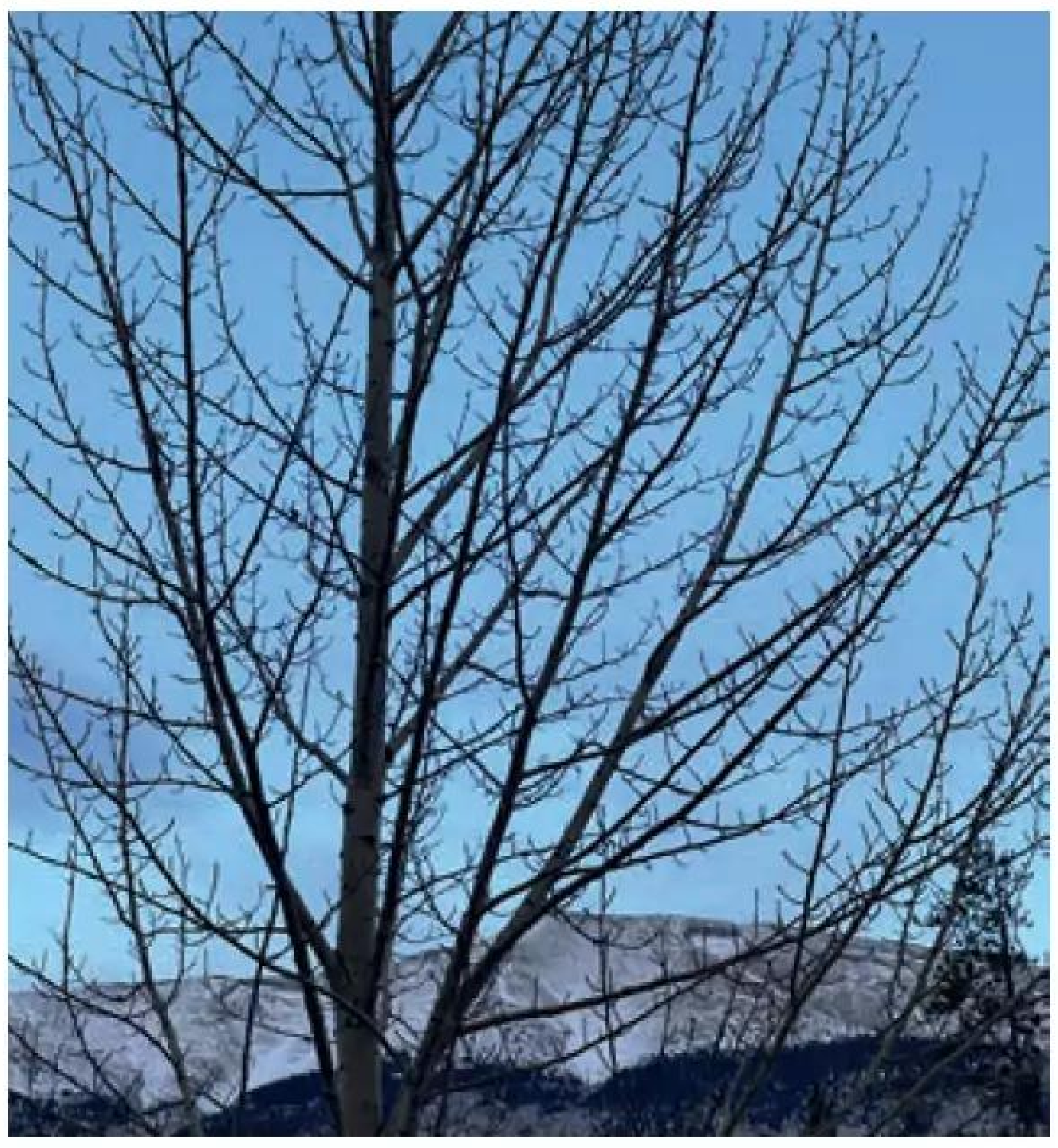
What's your day job about?

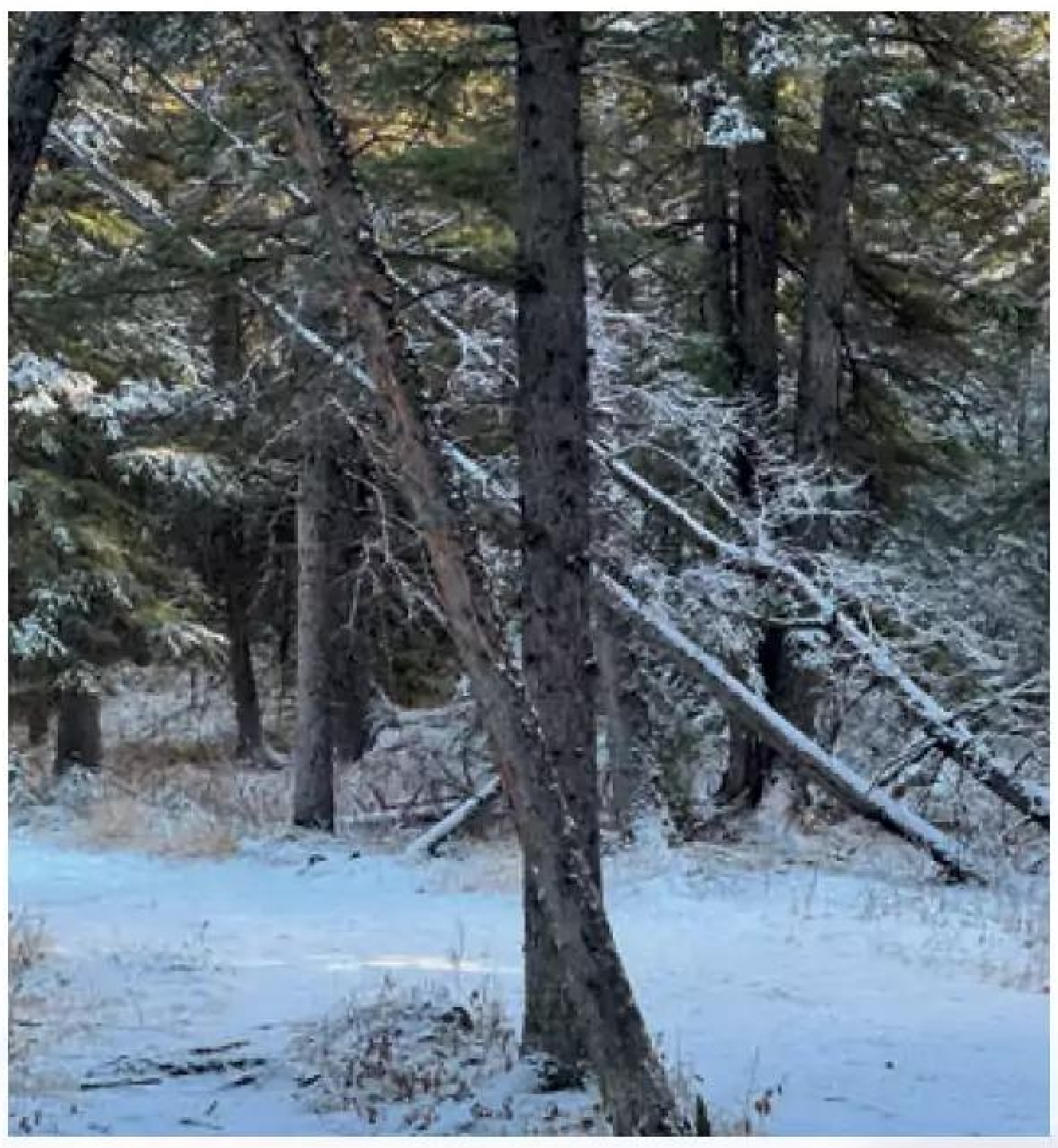
I pay my bills by running a custom woodwork shop with one other employee. Located in a small town we do a bit of everything from cabinets and millwork to doors and stairs. I have access in off hours but tend not to use it for my personal work, except to break down sheets and lumber and to use the thickness sander. This is also where my vacuum press lives.

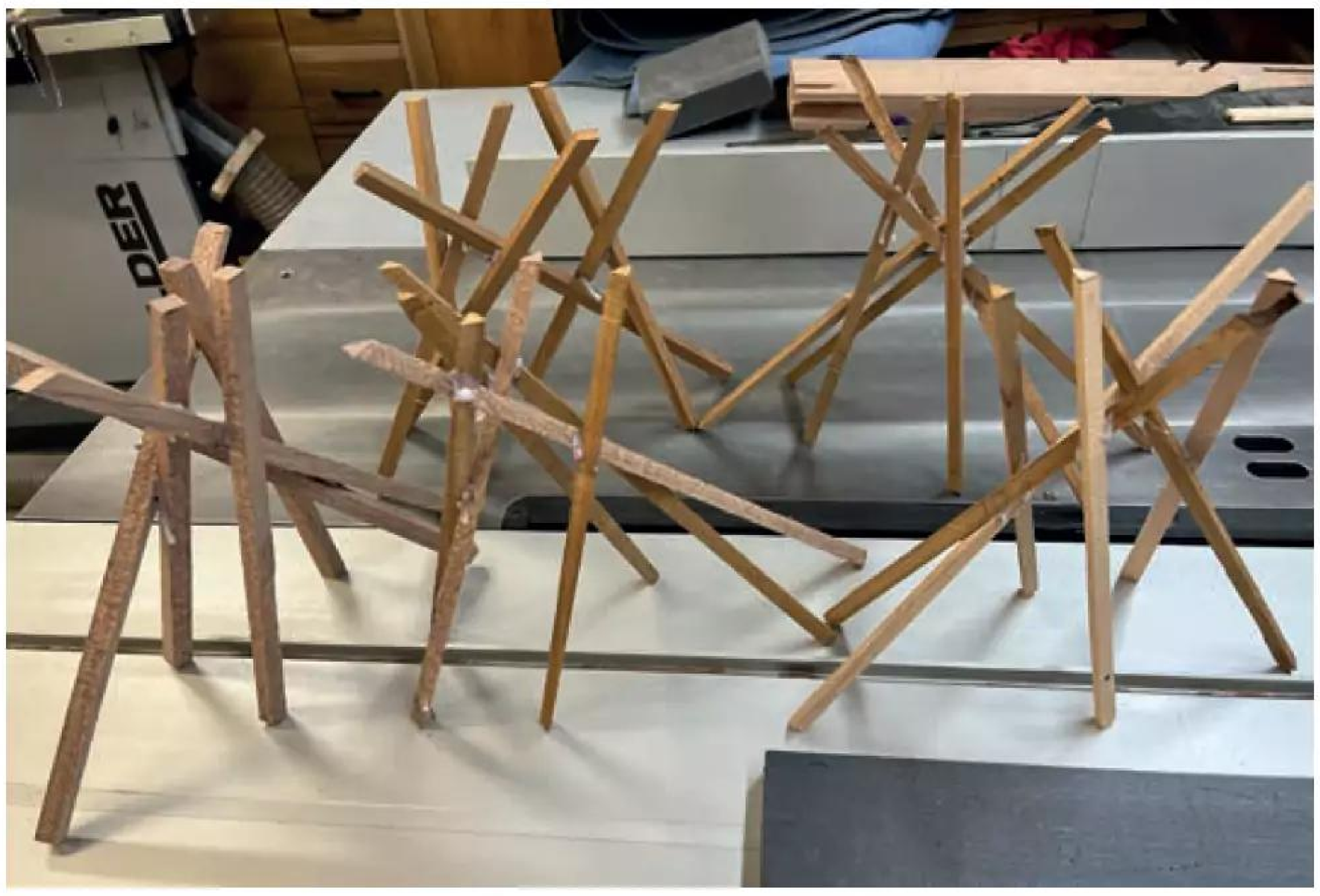
I work on personal pieces like *Crosswinds* in my small, but well equipped shop in my double garage. Working in my spare time, these pieces can take weeks to complete. At the home shop I can set up and leave machines and tools for a specific task indefinitely. I am actively trying to make the transition into doing my creative, personal work full time.

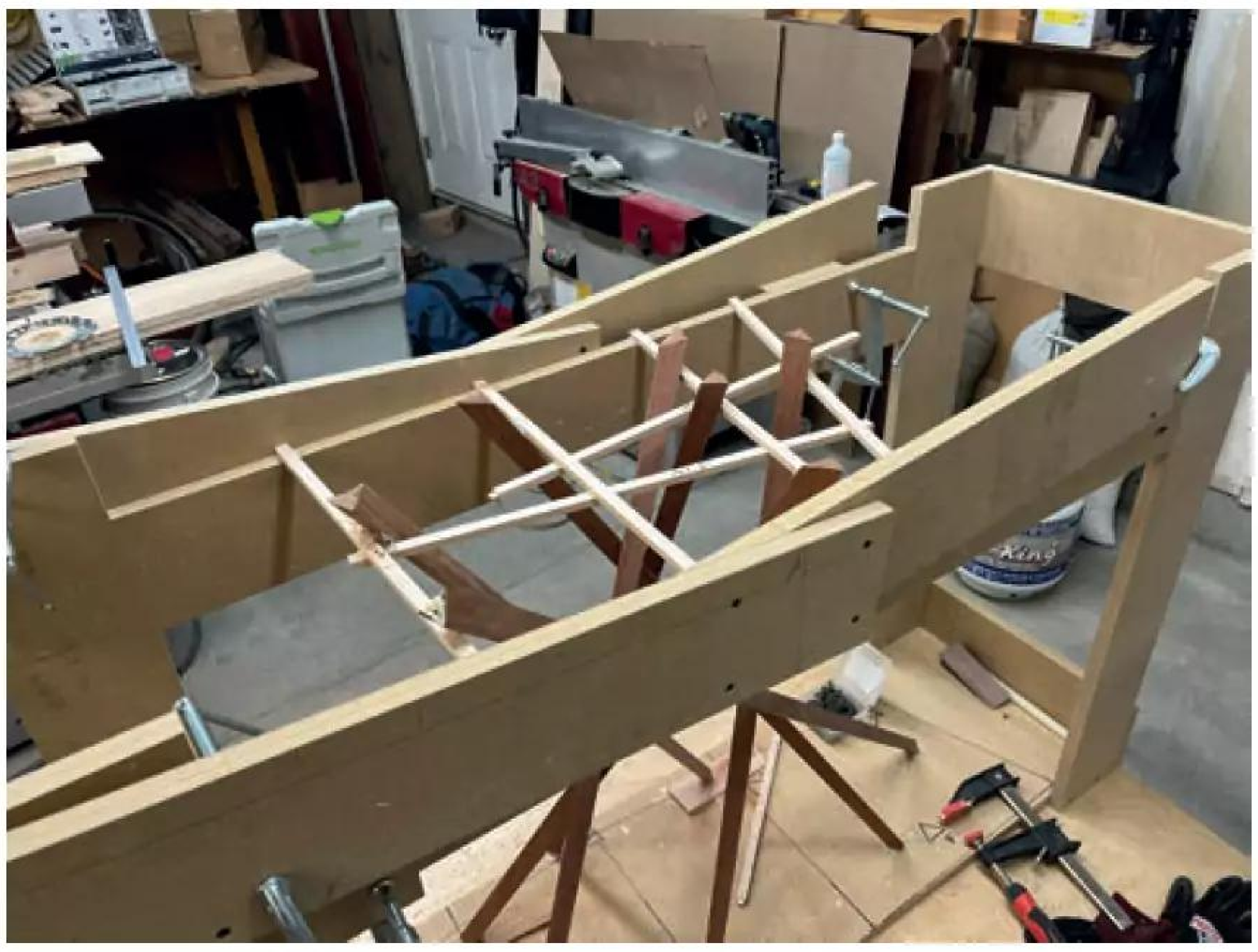
It gets very cold where you live in The Rockies. How does that affect your woodworking?

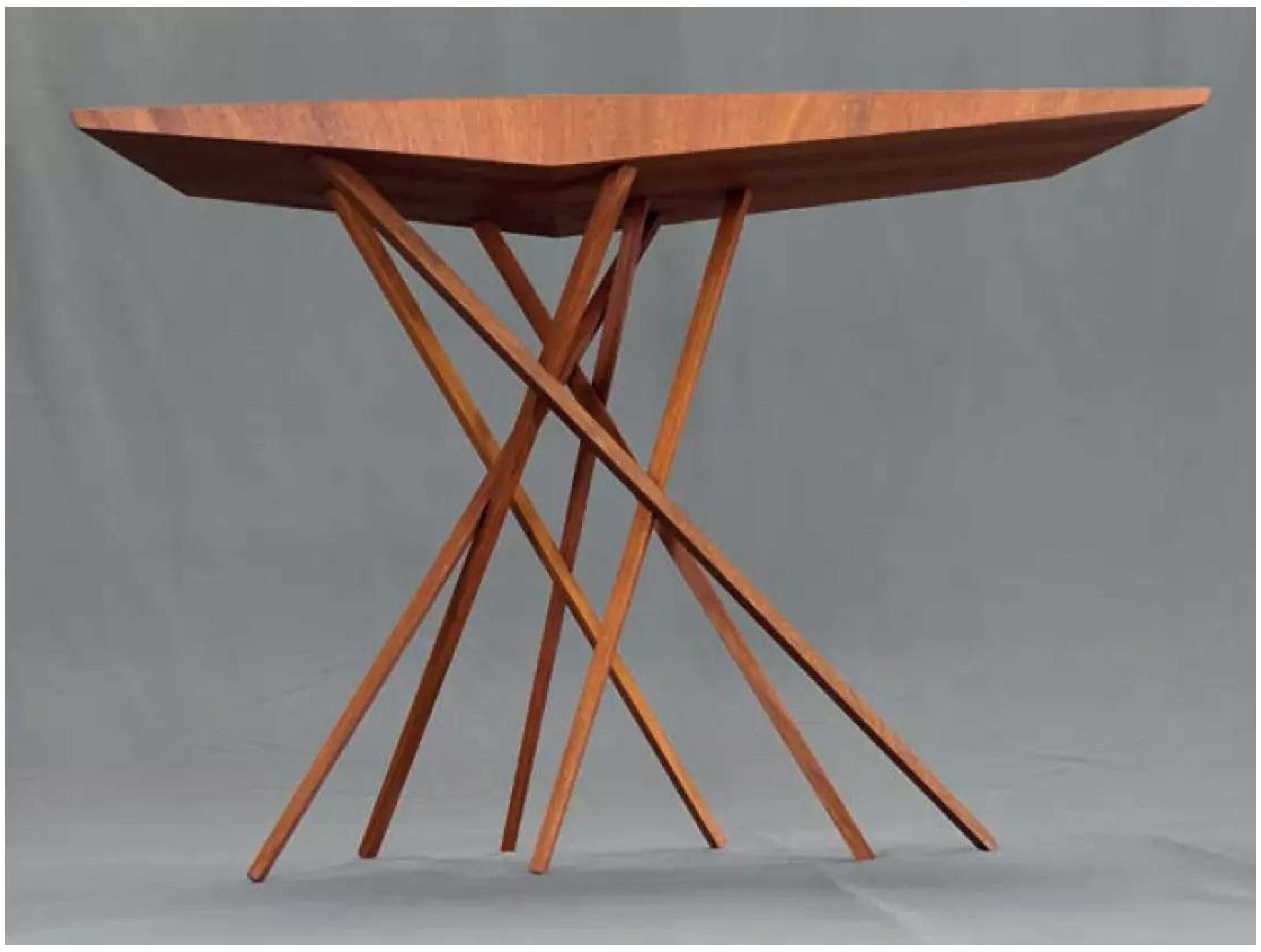
Yes, it gets cold here but the shop is heated. The main thing is that it's dry. We are on the dry side of the continental divide. Plus the cold temperatures in winter limit the amount of moisture in the air. Air at -20 to -40°C can hold very little moisture, heating to room temperature keeps this low humidity. In the winter the moisture content of our lumber can get down to 4–6%.











Above: Initial mock-ups for the base of *Crosswinds* were made scrap wood and holt-melt glue.

To assemble the base, the MDF exoskeleton shown was initially used to position and hold the legs to arrange and then cut lap joints. It was then used in conjunction with a router on a sled to cut the top of the legs to the angle meeting the tabletop. Lastly, the table was flipped upside-down and the jig used again with the router and sled to cut the bottom of the legs parallel to the tabletop.

Opposite: Réne LeBel's *Cube* forms have mitred together panels with random patterns achieved through through multiple stages of gluing, crosscutting and regluing.

The first glue-up is shown, initially all side grain here. The first panels are crosscut into strips that are rotated 90° and then glued into second stage panels.

After mitring the six panels are glued into the final cube form.

Shipped from more humid climates, lumber and even sheet stock can be very 'warpy' until it acclimatises.

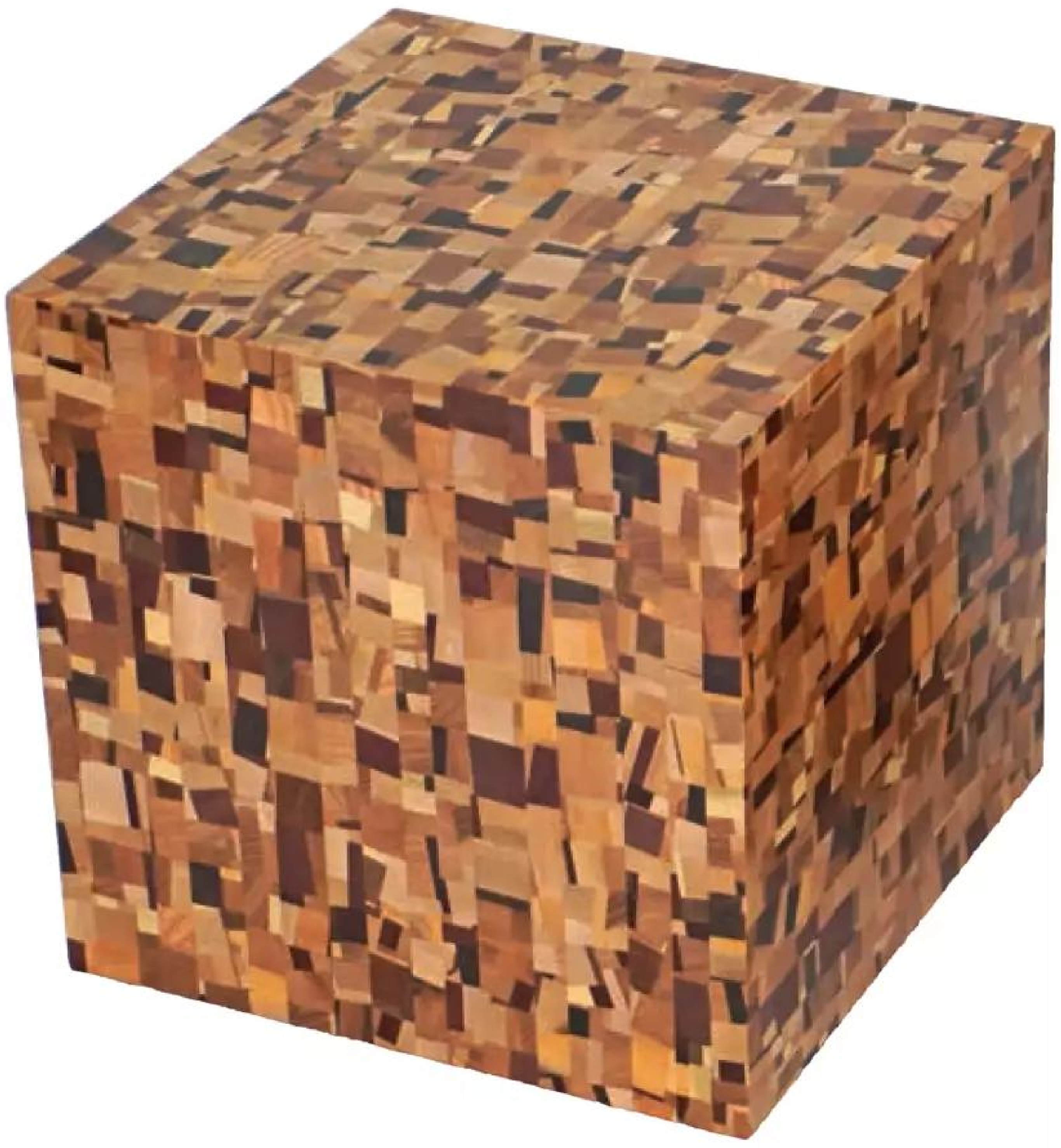
The dryness also makes PVA glues tack up very quickly. PVA costs more in the winter because it's shipped in heated trucks so it doesn't freeze. We only use the glues with the longest open and working times. I use an electric blanket to heat resin glues for curing. I think this is common elsewhere though. Sometimes I arrive and often leave in the dark, but in the summer it's light out until 11 at night.

How do you go about your 'randomly' arranged geometric compositions?

These designs are drawn out full scale by hand and ruler onto paper. Often I'll do a few versions then pick the one I like the best. I find it's important to have a paper plan, otherwise the design can run away on me. I don't necessarily follow the plan exactly but it gives me a road map.

I pick a starting point, usually the centre and generally work outwards enlarging around the edges. I use carbon paper to trace veneer pieces off the pattern. This is just a guide as the pieces need to be fitted to their neighbours much more precisely.

I use the sliding tablesaw to cut the veneer piece by eye and pencil mark, lining up the cut to the edge of a zero clearance base. A very good blade and minding grain direction are key. With a bit of practice, I get into the zone and get the cuts first try, but they can be adjusted with a block plane or sanding block.



When working the pattern outwards, I try to work so that only two edges are being joined at a time. Joining three or four edges is sometimes necessary but exponentially more difficult. This isn't part of the paper plan. The paper plan is only layout and aesthetics.

When people see these pieces at a show or exhibition, I'm often asked how it's done or if I have infinite patience. I say it's not that bad, it's just a process with a strategy to make it as efficient as possible. This seems natural and obvious to me. I'm usually met with blank looks, that at first I didn't understand. I now get that not everyone has an affinity for this kind of work!

What's behind your complex bases with multiple legs and more?

I try to not get stuck on typical or traditional forms of furniture. The goal (and this is a work in progress) is to deconstruct the function of a piece and design for that, forgetting every other example of that furniture form I've seen before.

As an example, a table generally is just a flat surface a certain height off the floor. You may need knee space for sitting or other demands, but fundamentally it is a flat plane parallel to the floor. Most people think of a table as a rectangular surface with four legs, one at each corner, maybe connected with aprons. We probably all have one and they work wonderfully but this is the form of 'table' I'm trying to forget. I'm exploring other options.

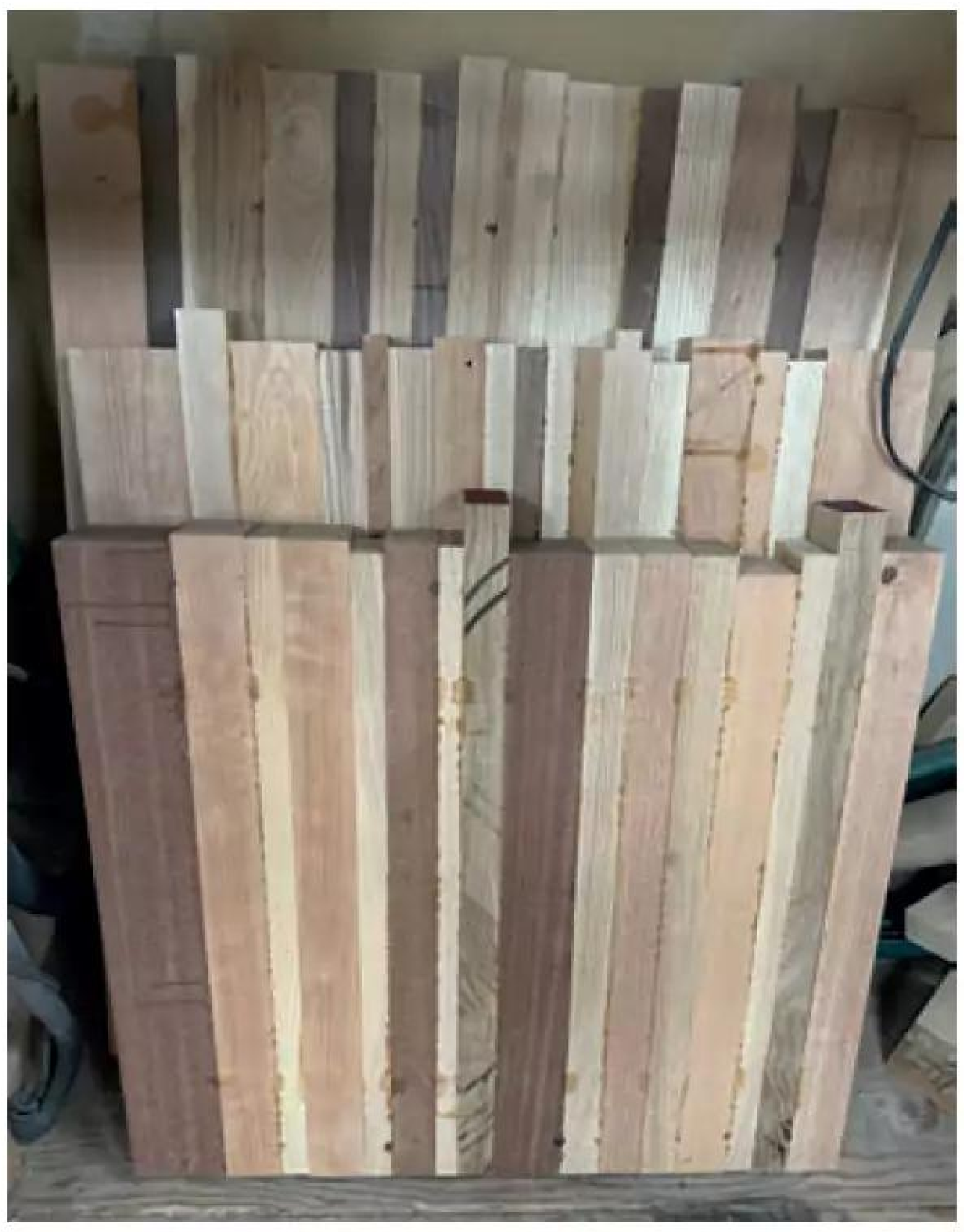
How do you make your cube forms?

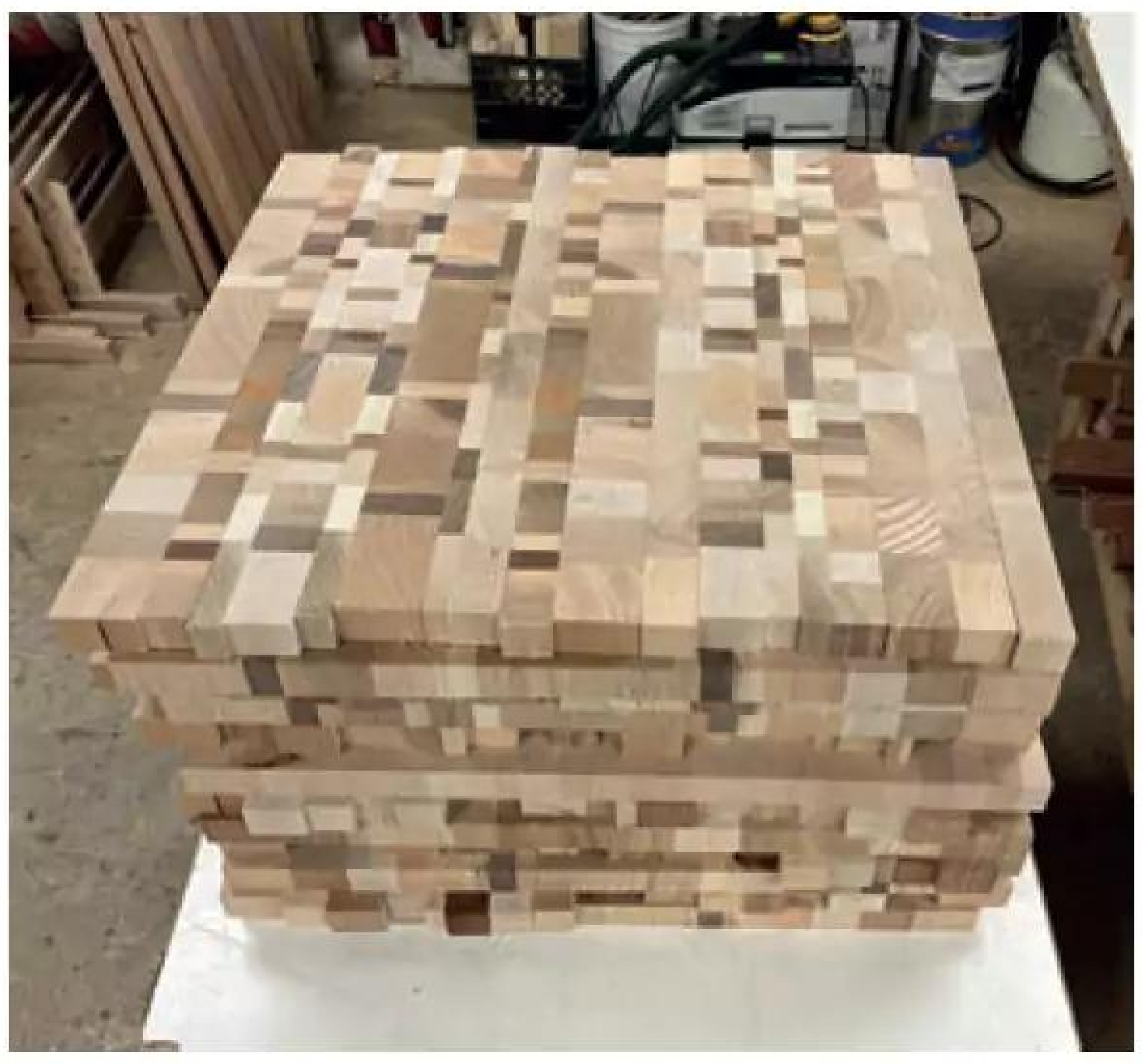
The Cube originated as another way to use up shop leftovers. The process has been called 'chaos endgrain' by cutting board makers. I start by gluing up strips of similar thickness offcuts into blanks that are just narrower than the width of my planer.

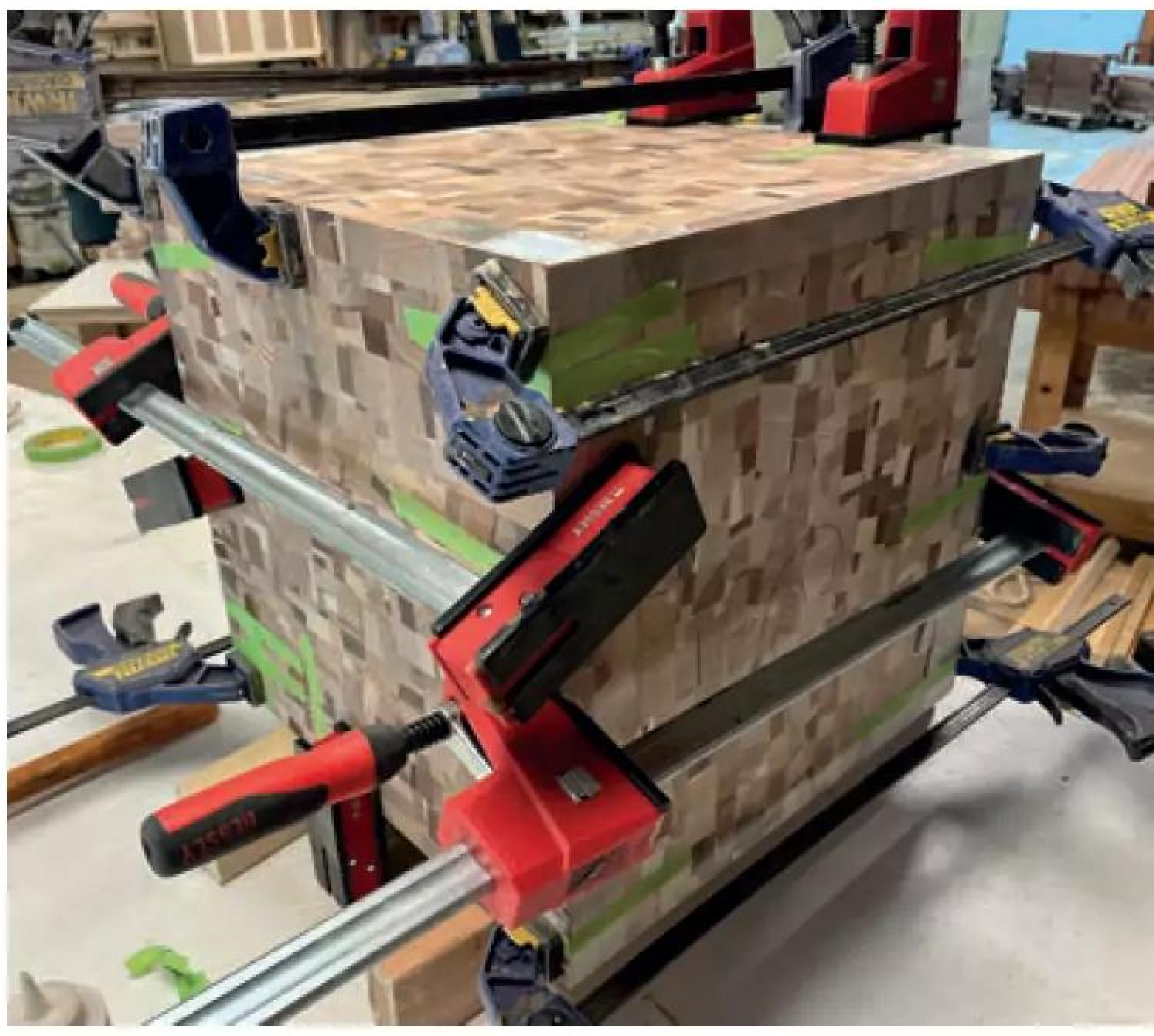
This takes a lot of wood so I make various thicknesses depending on what my scraps provide. After planing, I crosscut them into strips. The width of this cut determines the thickness of the endgrain pieces which become the faces of the cube.

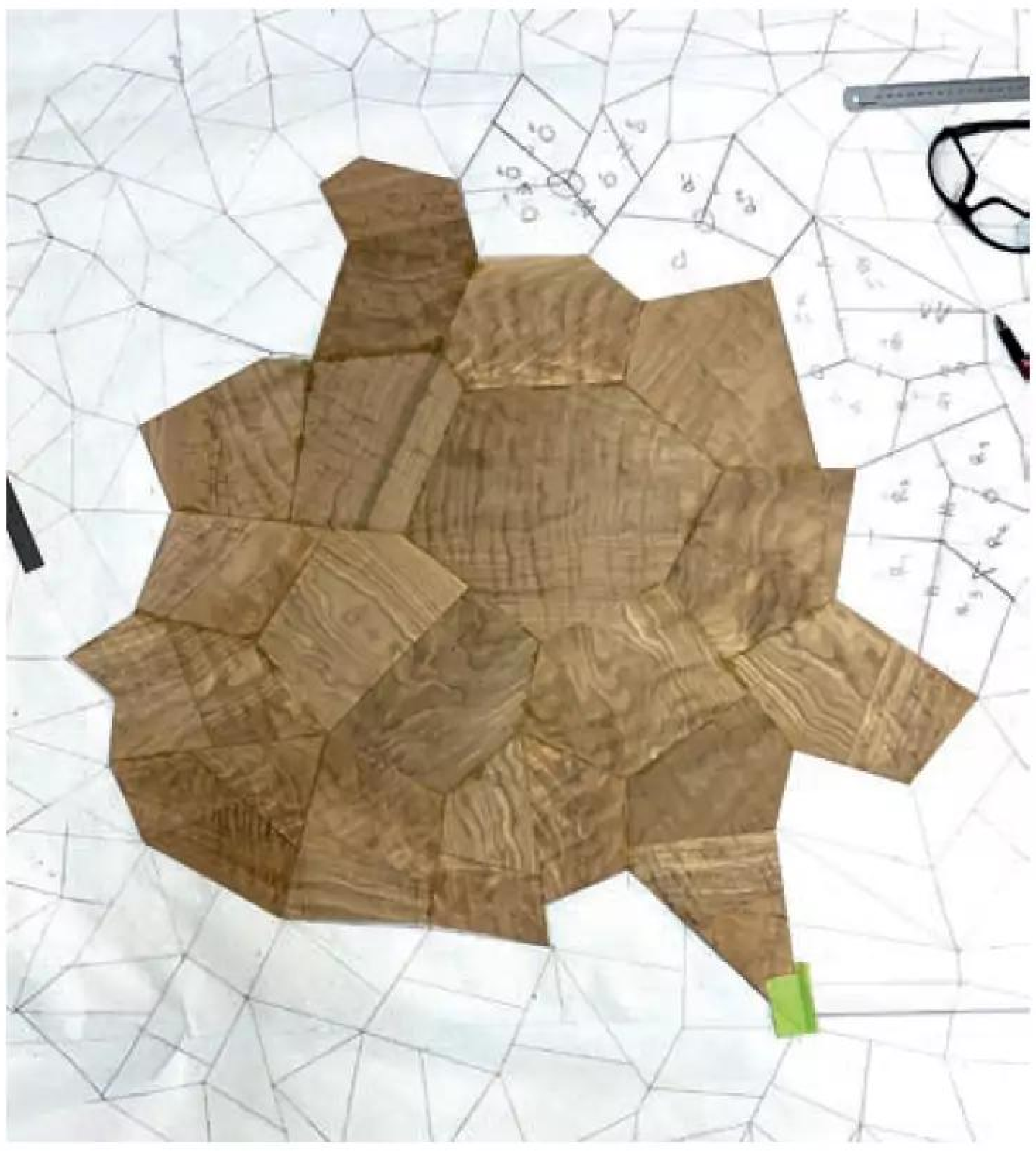
These strips are turned 90° on edge so the endgrain is facing up and down, arranged randomly and glued up into blanks with endgrain rectangles of various sizes. Crosscutting these into various widths promotes randomness as does arranging the resulting strips randomly and gluing them up again. If I cut the blanks at an angle I get more random patterns and triangles, but this also makes more waste.

I repeat this cutting and gluing five or six times until the pattern looks good, and uniformly mixed. Now I have the









Left to right:
Réne spends some time finessing a coopered form in his day job workshop.

The cracked ice pattern may be 'random' but it all starts with a plan. Réne works outwards from the centre, cutting pieces and fitting them.

After pressing the completed cracked ice layon to its substrate, the edgings are cut, fitted and glued on.

Réne's home workshop is housed in a garage – it's compact with well thought-out storage and work areas.

Below: Réne's WORT table has a random cracked ice veneered top with solid edging and coopered and tapered base.

faces of the cubes. I run them through the thickness sander to flush them, then cut them into squares with mitres on the edges. Six mitred pieces make the faces of each cube.

I use packing tape and do a complex mitre fold to make the faces into a cube. The whole process is very labour intensive. Also, a lot of material (around 40%) is lost cutting through kerfs and in the unusable ends (especially on angled cross cuts).

By the way, I'm calling the cubes '7 of 9' as part of a series and partially because of their resemblance to a Borg ship from Star Trek.

As a professional, how do you balance time vs money?

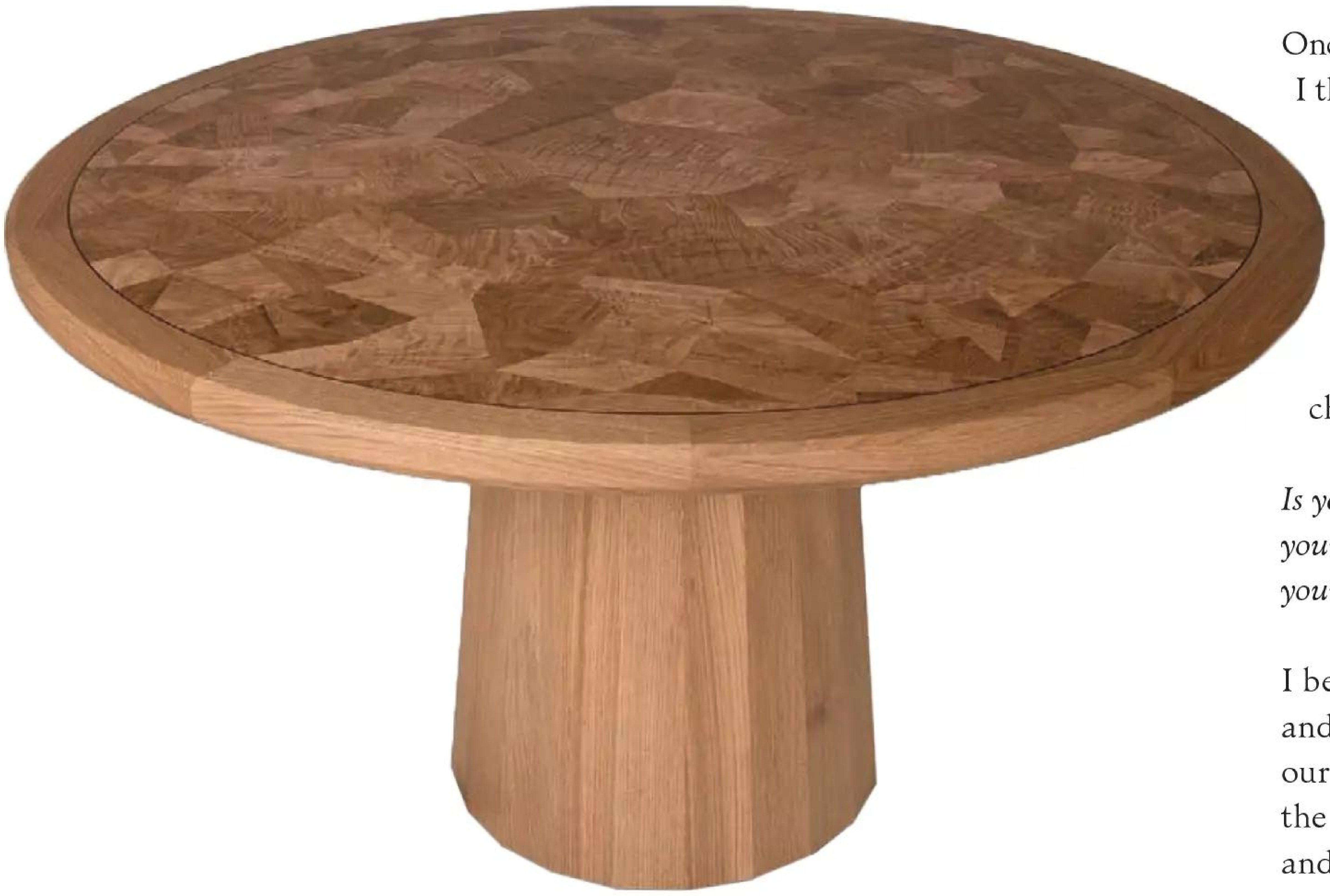
I do keep track of the amount of time a project takes to make. I enjoy the technical challenges of woodworking and attempting new things. However, I try to not let the technical side of the work be a means to an end, or let difficulty or complexity be for their own sake.

When I'm designing the goal is to turn off the woodworker part of my brain so I'm not thinking about how to make something. This is an attempt to maximise creativity – thinking about how to build something will stunt an idea before it is fully formed or explored.

Once a worthy design is reached, I then figure out how to build it. Sometimes this results in complex techniques, but I think the end results are better. Plus this process brings me joy. When I do commissions they generally are simpler forms to keep costs in check as the job will be quoted.

Is your locale reflected in the patterns of your built-up forms? Does it influence your aesthetic?

I believe everything we experience and that surrounds us is part of our inspiration. It follows that the environment where I live, and spend most of my time, is



undoubtedly reflected in my aesthetic and the forms I use.

Crosswinds is a good example of that. Periodically, we get very strong gusty winds here called Chinooks. Actual crosswinds are a real and common occurrence here. The Rocky Mountains are sharp and angular similar to the geometric, angular forms I've been so fond of recently. Similarly, the wintertime, leaf-less branches of deciduous trees create geometric patterns.

We also get something here called surface hoar. It's a frost that forms overnight and coats surfaces with tiny ice crystals, again a geometric pattern. The forests here are mainly composed of skinny, tall coniferous trees.

When I'm out near my house in the woods, I see blown over trees with their tops hung up in the neighbouring trees canopy. The criss-crossing pattern is very similar to the legs of crosswinds. And in fact the trees were likely pushed over by a Chinook crosswind!

You wrote: 'What is the point of a scrupulously crafted piece if it has not been touched by art to evoke an emotional response, please the eye, or create attachment with the audience?' Réne, how do we add that touch or artistry to our work?

I'm still trying to figure that out! I think it starts with caring about the outcome, and how the parts interact with each other, the environment and people. For me it's a deliberate and intentional goal to strive for, not that I always achieve it.

Many years ago I studied the elements and principles of design, and continue to be interested in proportions. Incorporating these tools into one's work is a good foundation to make it happen. I don't think there is a formula that always works for me (or for anyone).

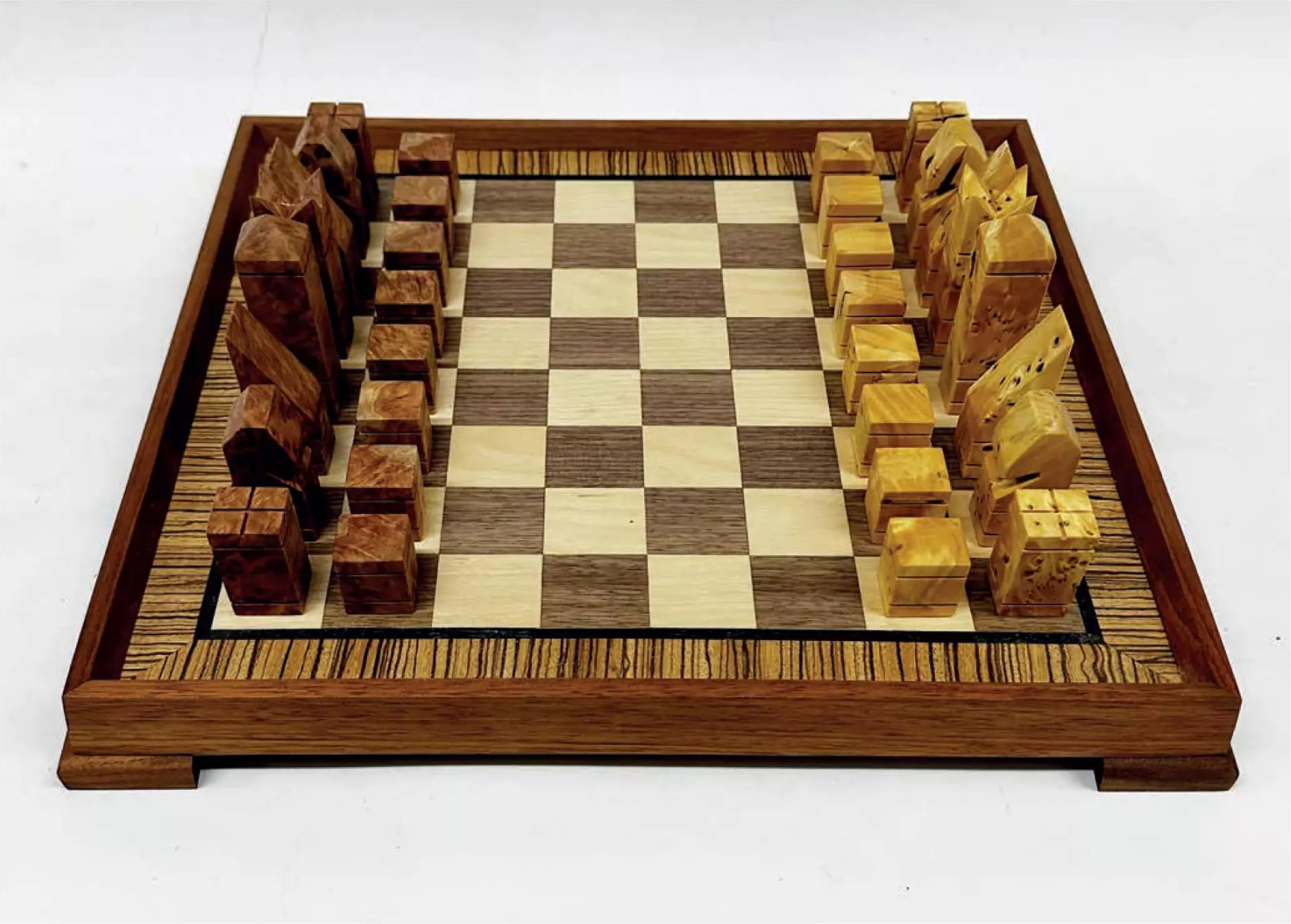
Another helpful practice for me is to not rush. I'll typically start with a sketch, move to scale drawings and then maybe a scale model or samples. At each stage I try to live with each drawing or model for a bit, and come back to it periodically to revisit it. I find it easy to get attached to an idea initially, but it might not be the best idea. Revisiting allows me to evaluate more objectively, and make changes if needed. I believe our brains work on this stuff subconsciously. Allowing the brain the time to work on these problems often yields fruitful results. But I also like to allow for minor changes during the construction. No matter how long I do this, even with good drawings and models, I can never fully anticipate how something will look full scale in the finished material.

Photos: Réne LeBel

René LeBel @lebel.rene has been crafting work in wood professionally in Canada for over 20 years. Starting out self-taught using only hand tools, he then experimented with a brief stint timber framing. In 2004, studying fine woodworking at Selkirk College became the springboard for nurturing a continuing passion. His craft was further refined in a handful of shops in British Columbia's interior. He now lives in Canmore, Alberta. Learn more at www.renelebel.net

Making a Chessboard

David Lim explains the process of parquetry as he shows how to create a chessboard using commercial veneers.



Parquetry is an elegant woodworking technique that involves assembling geometric patterns using thin slices of wood veneer. While marquetry often depicts pictorial designs, parquetry is primarily about repeating geometric forms, and one of the most recognisable patterns is the classic chessboard.

This article introduces parquetry through a chessboard project using commercial veneers, a great way for beginners to learn veneer work while refining their precision and accuracy.

Commercial veneers are typically 0.5–0.8mm thick, making them easy to cut with a box cutter or a Stanley knife. This is one of the main reasons I prefer using commercial veneer over shop-sawn veneer, which is thicker and would require a tablesaw or scrollsaw for cutting instead of a knife. Thin veneers allow for quiet, portable work, making it possible to do parquetry at home, in a small workshop, or even while travelling – my marquetry kit weighs less than 5kg and fits in a small bag.

Choosing the veneers

A standard chessboard consists of an 8 × 8 grid of alternating dark and light squares, noting that players must always have a white square in the righthand corner. There is no need to make a traditional black-and-white contrast; natural woods do come in almost black tones, but pure white is not a naturally occurring timber tone.

Some common veneer choices for dark squares are ebony or wenge for a deep black colour, walnut for a rich brown, and jarrah or red cedar for a dark reddish hue. For contrasting squares, holly is the lightest natural veneer (difficult to source in Australia), but maple or ash are great alternatives.

For a championship-size board, squares should measure 50–56mm which makes the full board quite large. I prefer 38mm squares and find this size better suited for household use. The same techniques apply regardless of the size board that you are making.

Your choice of veneer species may also be influenced by the chess pieces you have, or you can make matching ones. **Fig.1** shows the dimensions for the pieces I made which are shown in the main image.

Above: The chessboard on this page has squares made from walnut and maple veneers.

Opposite: The author's chessboard in Huon pine and Tasmanian burl myrtle. features inlay and crossbanding in zebrano. The pieces are made from Huon pine and red mallee.

1. A 38mm brass straightedge was used as a guide for cutting veneer strips for the parquetry.
2. You need four strips of each species. Each was cut 50mm longer to allow for trimming.
3. The edges need to be perfectly straight. A long sanding block with 80 grit sandpaper and two sanding cauls allows you to sand the edges of all the strips at once.
4. Carefully sand one edge, then flip the clamps and do the other side.
5. Measure at different points along the length to fine-tune – accuracy is critical.
6. The first stage of creating the veneer layon is to glue the edges of the strips and secure with tape.
7. The first layon is then cut into 38mm wide strips.
8. Rotate every second strip so the squares alternate.
9. After refining the edges and gluing up, a solid edging was applied.

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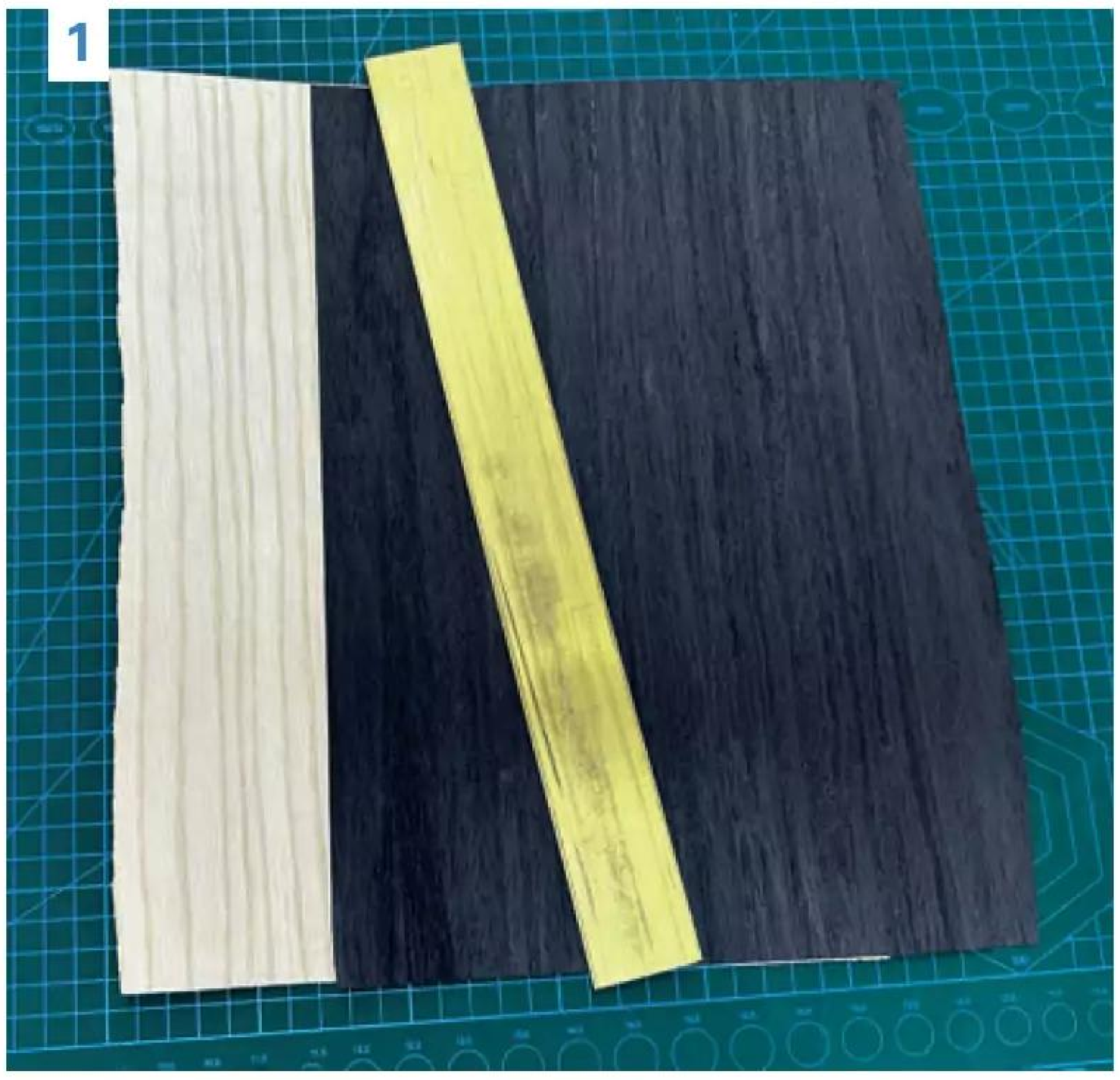

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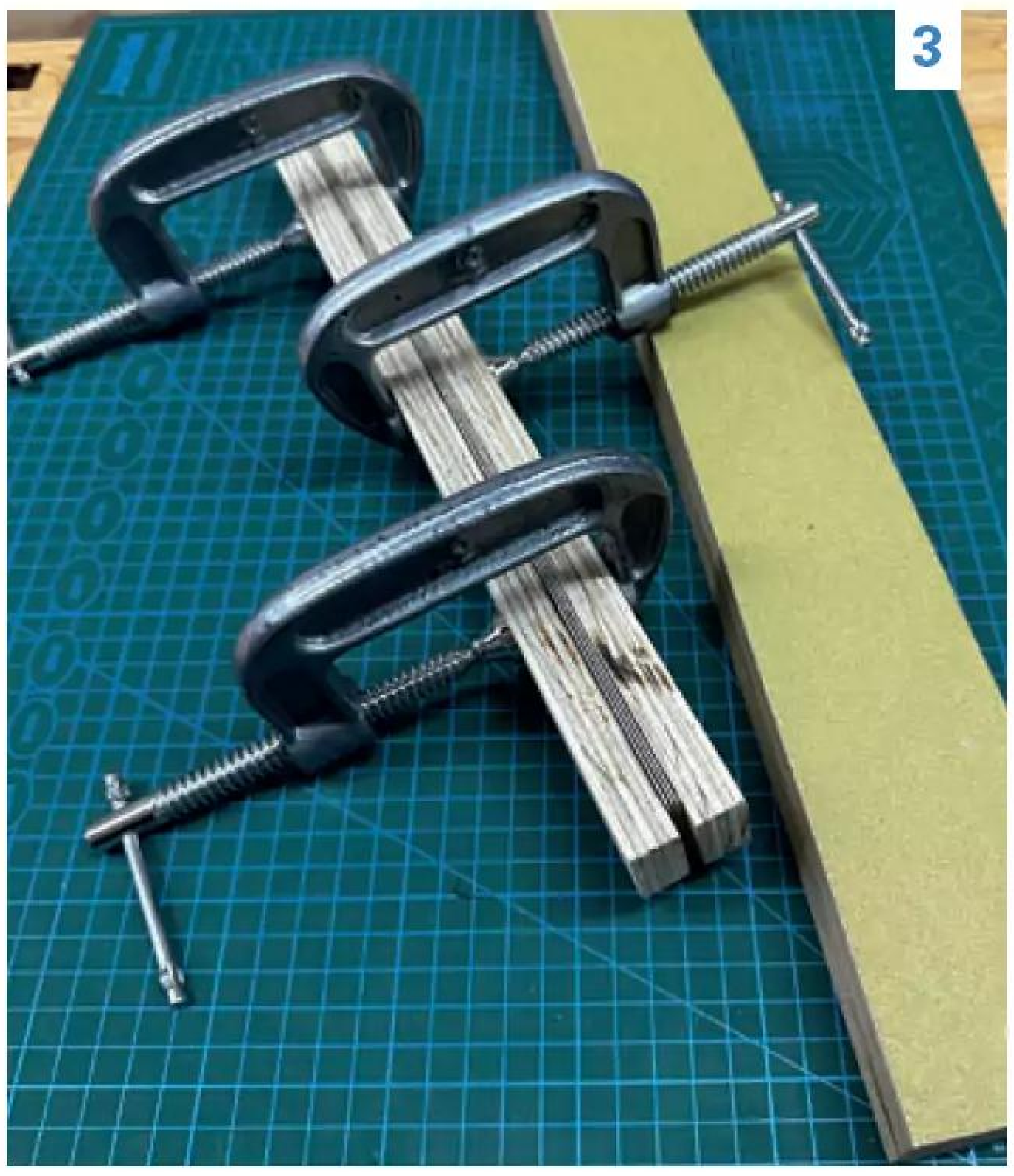

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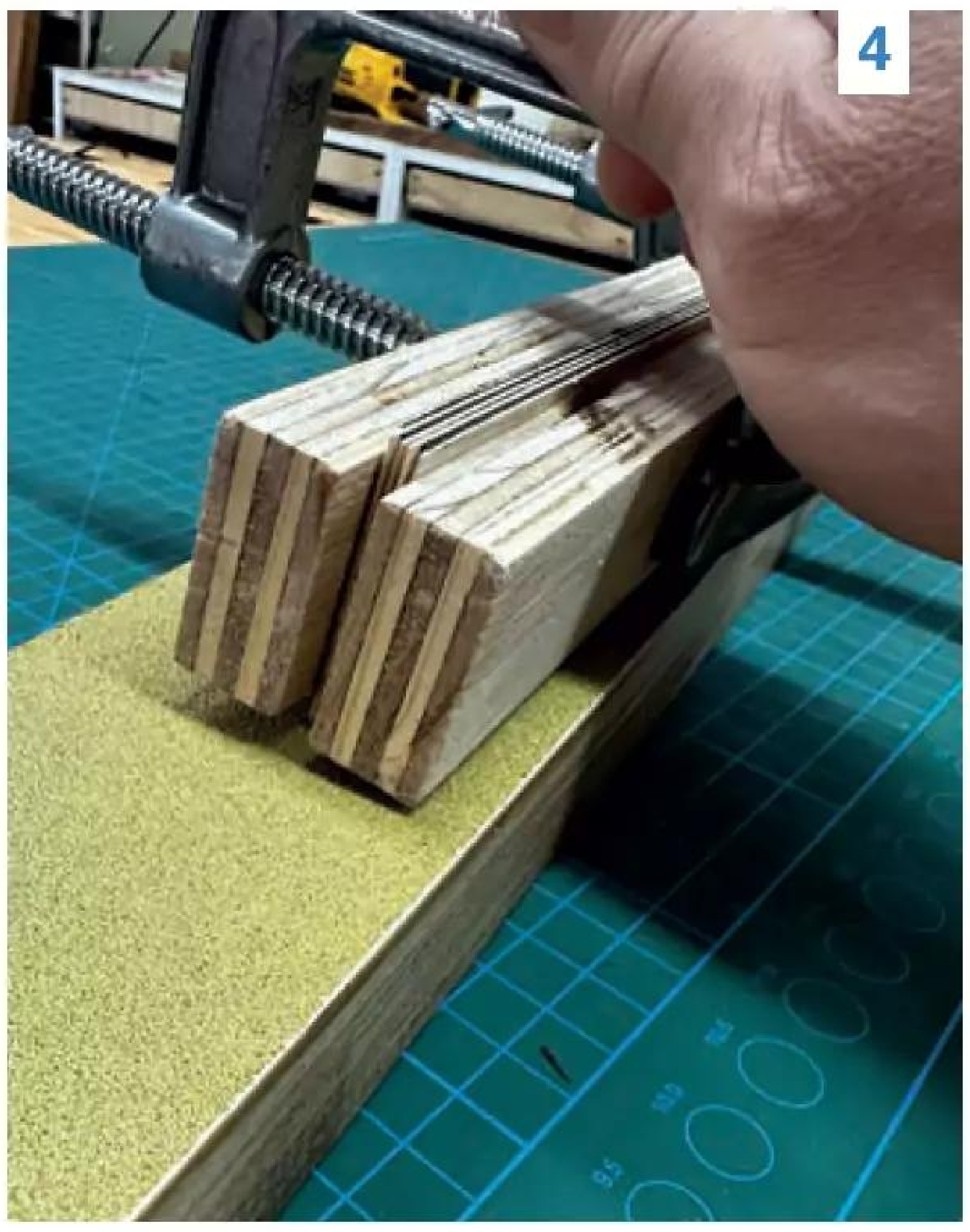


Cutting the veneer strips

To begin, you need to cut veneer strips that will later be assembled into a sheet or 'layon'. Precision is key here, because small errors will compound.

Rather than measuring each strip individually, I use the 38mm brass cutting guide shown in **photo 1**. This method is much faster and ensures uniformity.

Place the veneer flush against a ruler or straightedge, lay the 38mm brass strip on top as a guide and then use a sharp box cutter to make the cut. Repeat this process until you have four dark and four light veneer strips, each longer than 354mm (and with an extra 25mm or so at each end) to allow for trimming later (**photo 2**).

Refining the strips

Once the strips are cut, they must be identical in width and perfectly parallel to ensure the checkerboard pattern aligns.

Stack all eight strips together between clamping blocks held with three or four G-clamps (**photo 3**). You can then run the edges over 80 grit sandpaper on sanding block (**photo 4**).

Flip the clamps and sand the edges on the other side. Use digital calipers to measure five points along each strip (ends, centre and midway points) and refine until all strips match within 0.1mm (**photo 5**). Getting the width right at this stage is critical, as even a 1mm error can become an 8mm misalignment when assembling the final board.

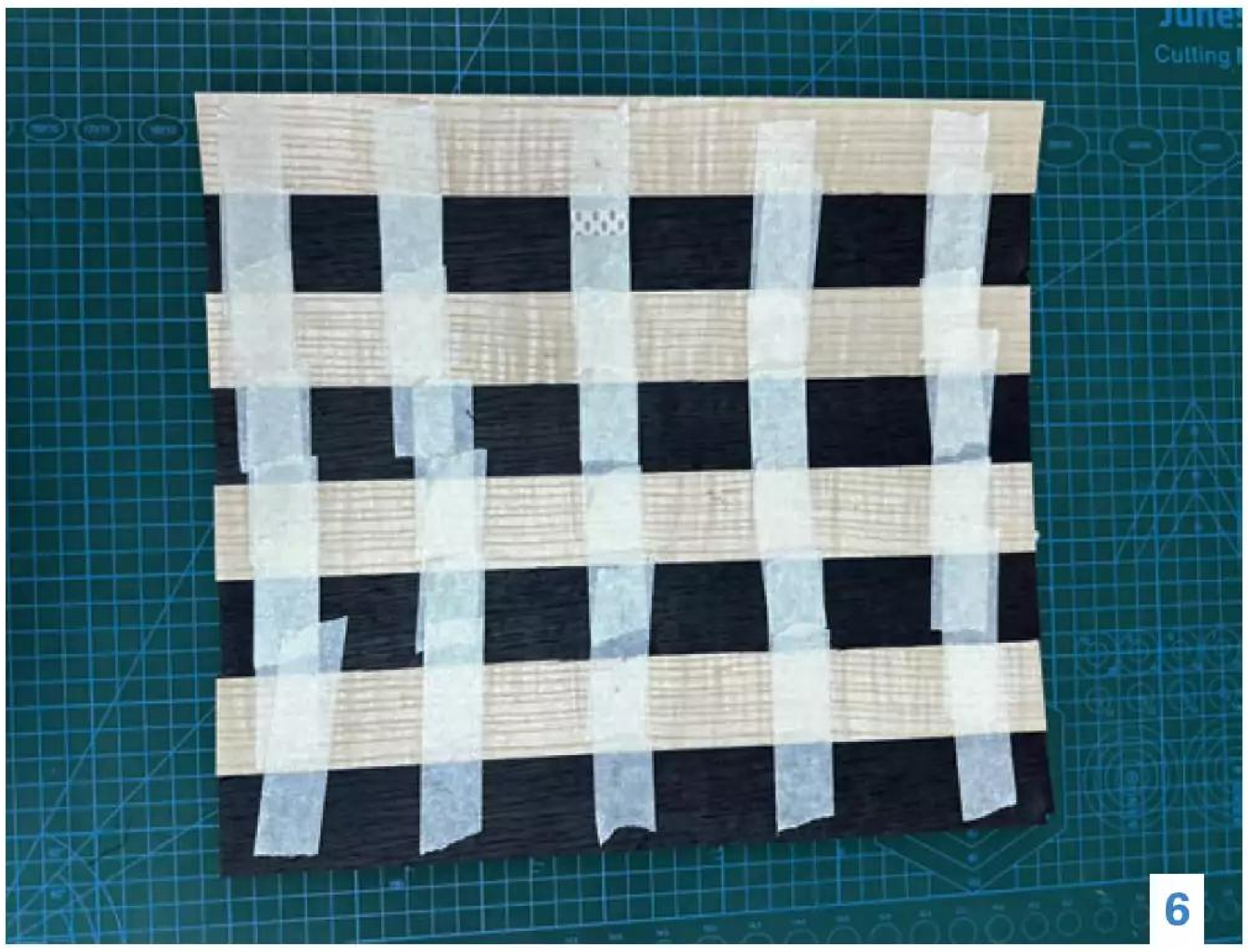
Making a veneer layon

With the strips precisely cut, the next step is gluing them edge to edge. Apply a thin bead of PVA glue along each edge and use masking tape as a clamp to pull the pieces together (**photo 6**). Once all eight strips are joined, place them under a cutting mat for about 30 minutes to let the glue set.

The glue joint isn't particularly strong, but it holds well enough for handling the veneer as a single layon.

Cutting the strips for the chessboard

The veneer layon is now rotated 90° and again cut into strips to create rows of alternating squares. Use the 38mm brass guide as before. Be mindful of tear-out, which can happen when cutting across the grain.



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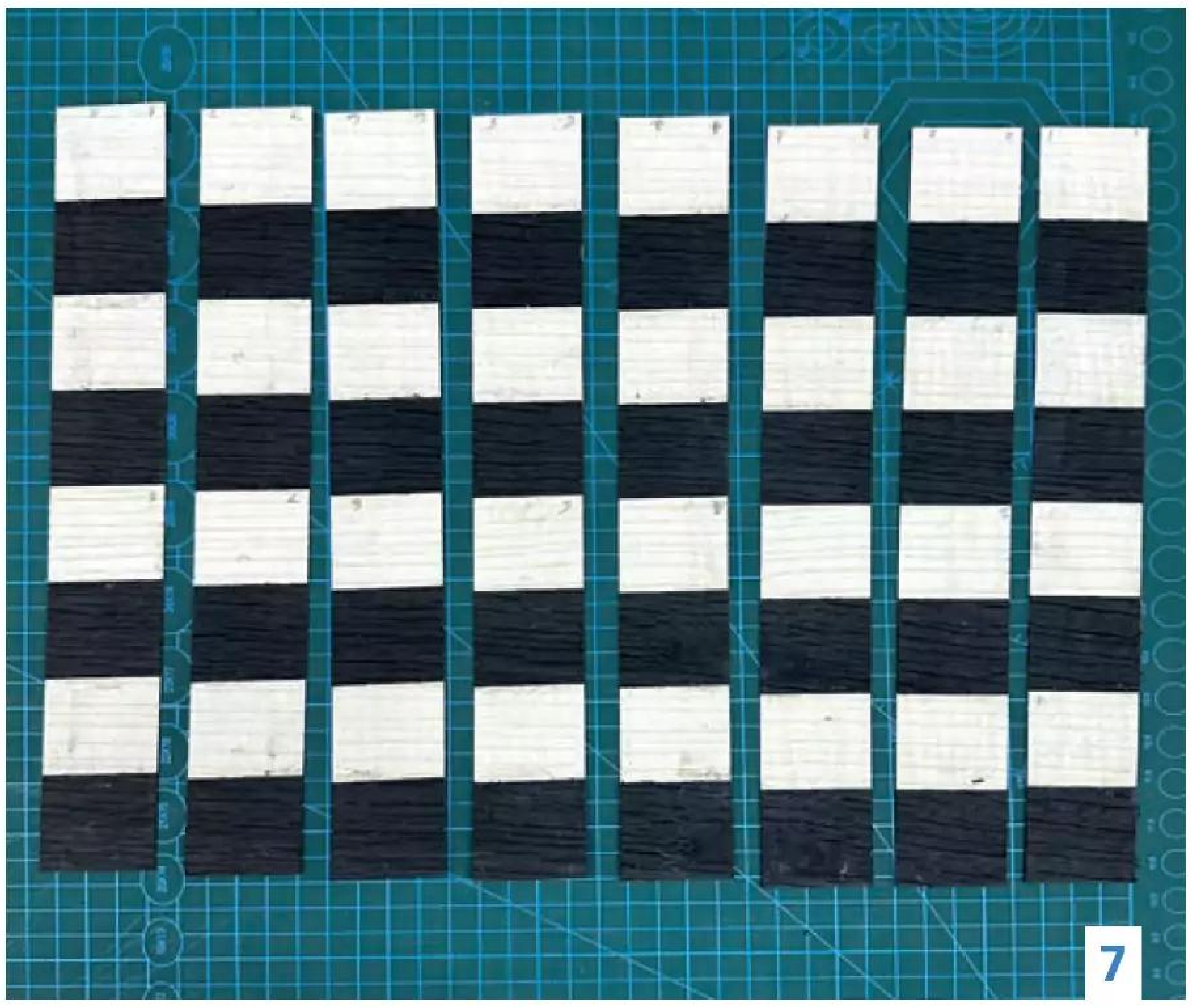

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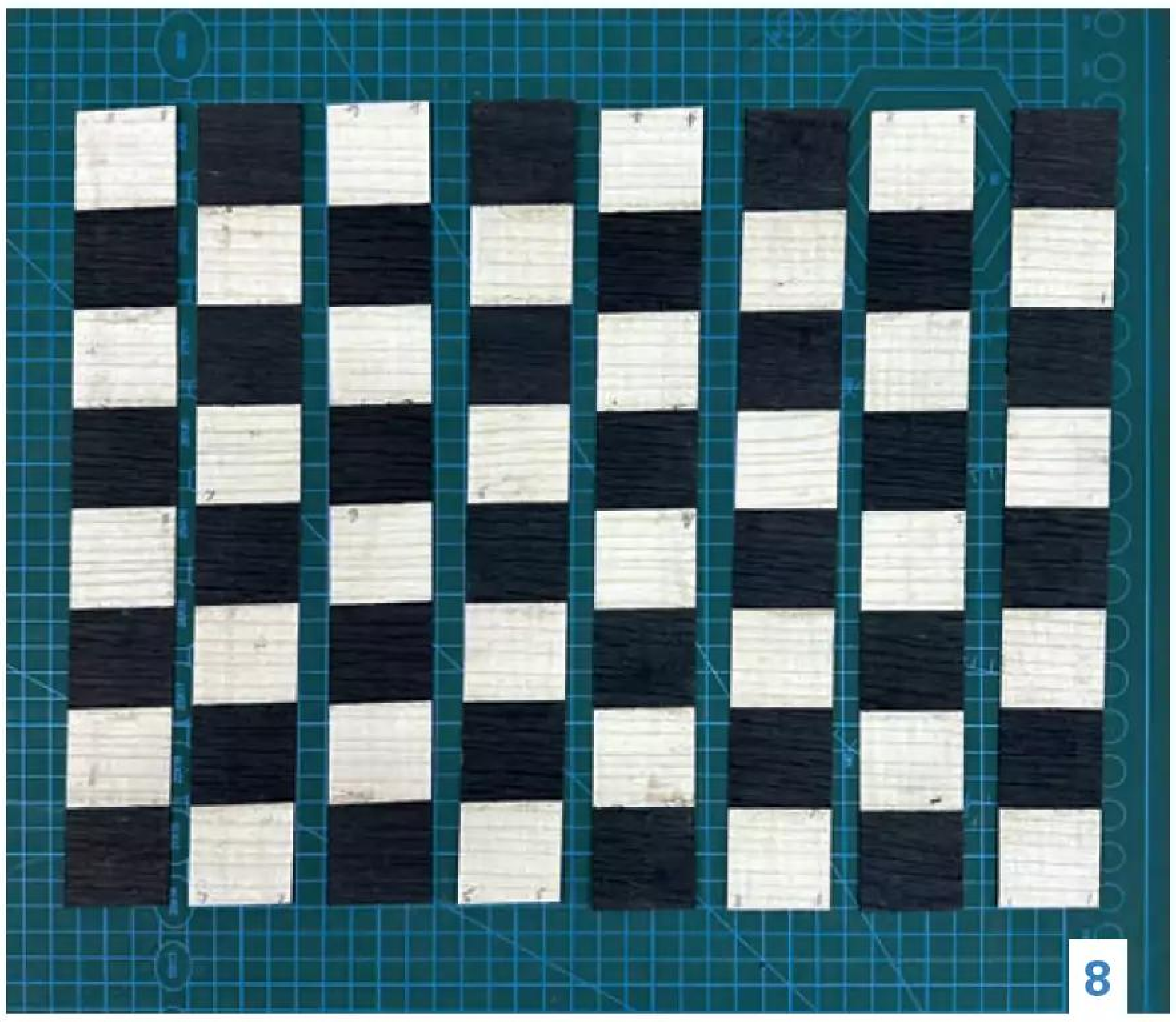

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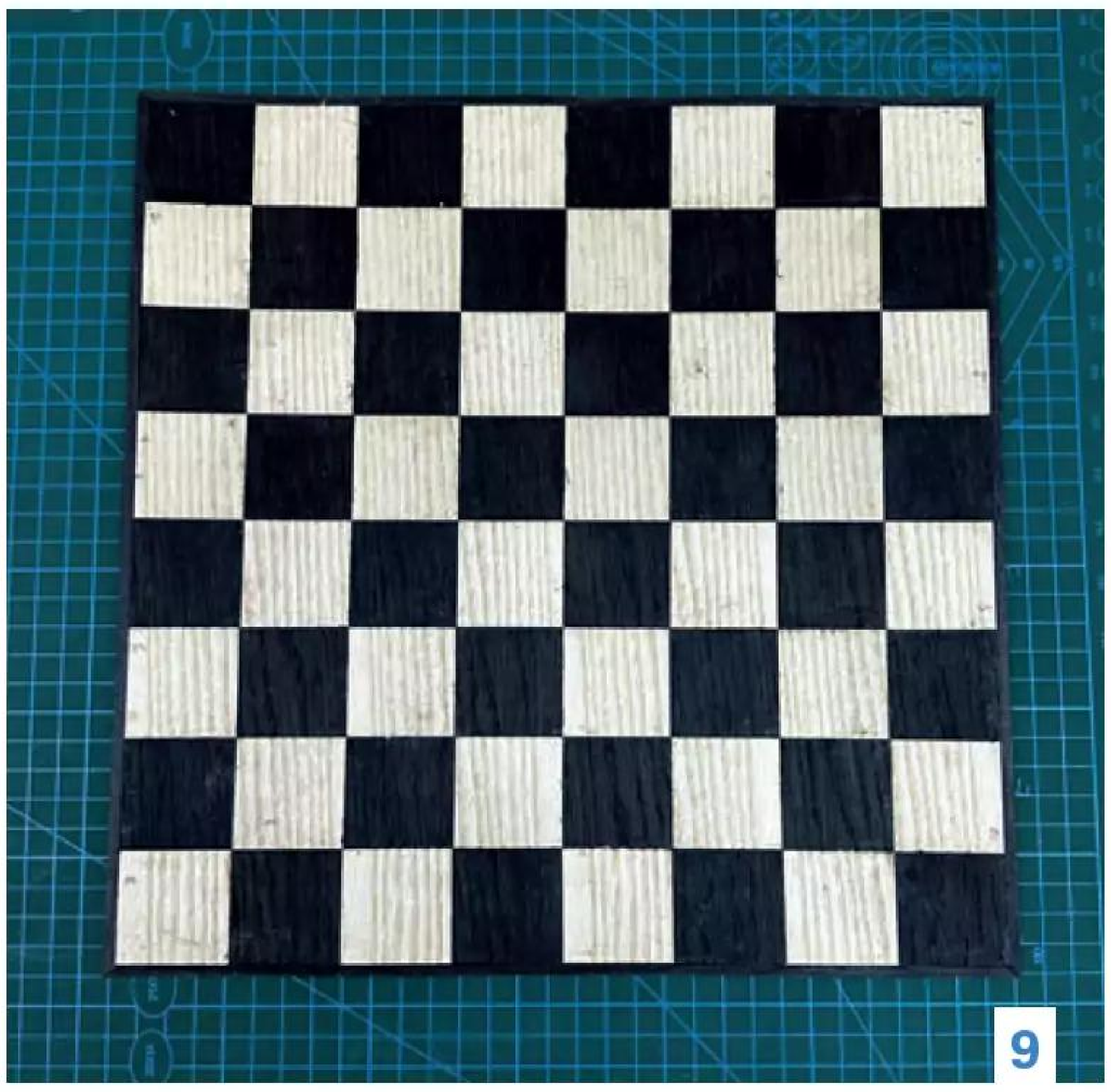

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To minimise tear-out, use a sharp knife (snap off a fresh section of blade) and apply masking tape to the underside to hold the grain. It's better to make multiple light cuts instead of a single deep one. You should now have eight strips, each containing eight alternating squares (**photo 7**).

Refining the strips again

As before, the strips must be precisely parallel. Use clamping blocks to again sand the strips together until square, straight and flush. Flip the clamps and sand the other edge, using digital calipers to check for accuracy and fine-tune as needed.

The goal is to ensure that the strips are exactly the same width, so they align perfectly when assembled into a chessboard.

Assembling the chessboard

With the strips prepared, it's time to reassemble them into the final pattern. Every second strip is now rotated 180° to create the alternating checkerboard effect (**photo 8**). If everything has been done accurately, all the corners should line up perfectly.

At this point, you can dry-fit the strips before gluing to check for alignment. If minor adjustments are needed, they can be made with careful sanding.

Dressing the edges

Once the veneer layon has dried, the edges may not be perfectly straight. Sanding them carefully is crucial before adding a border.

Hold the sheet firmly and use a sanding block to straighten the edges. Alternatively, place it back in the clamping blocks and sand carefully. Be slow and deliberate, ensuring you don't put too much stress on the veneer, as it may fall apart.

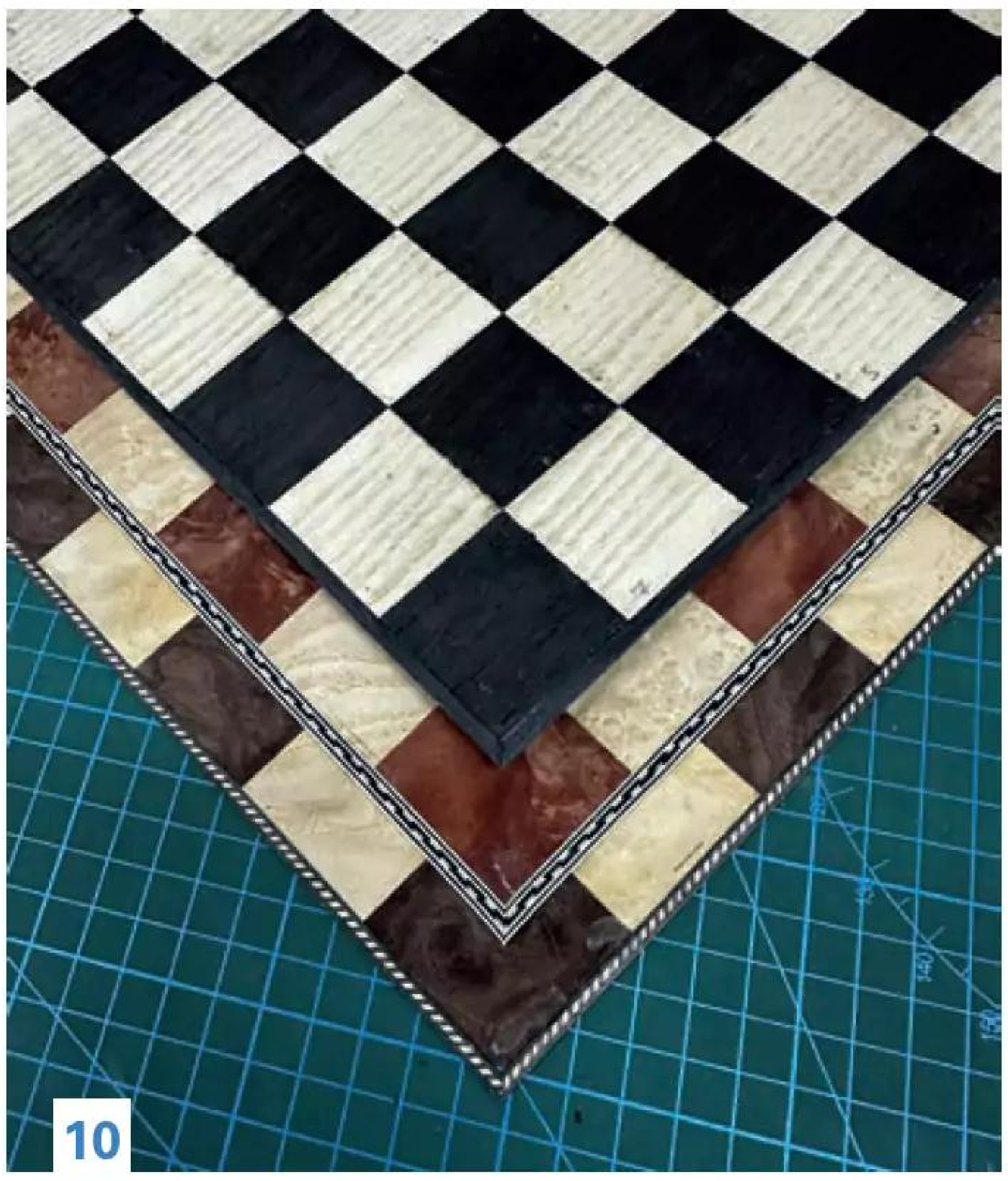
Adding a solid black border

Once the checkerboard pattern is complete, the next step is to add a border or decorative banding. This frames the design, giving the chessboard a more polished, professional look.

A solid black border is my preferred choice because it is visually striking and also forgiving – it effectively hides small imperfections or misalignments in the parquetry. Ebony, dyed veneer or black-stained timber veneer work well for this purpose (**photo 9**).

Veneer inlay banding

Another option for the border is to use pre-made veneer inlay banding, which is available from veneer suppliers in various widths and patterns. These bandings are relatively inexpensive, especially considering the work that goes into making them. Bandings such as these are an easy way to add intricate detail and can elevate the overall look of the board (**photo 10**).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Apply glue to the edge of the checkerboard and press the first border piece into place, ensuring it extends slightly beyond both ends (overhang). Secure it with masking tape or veneer tape to hold it in position. Continue gluing and taping each of the remaining three sides, making sure all pieces have a slight overhang at the corners.

Where two border or banding pieces meet at a corner, they will overlap. Use a steel ruler and a sharp knife to cut through both layers at once to ensure a perfectly matched mitre joint. Alternatively, you can trim and refine the mitre with a sharp chisel for a precise fit. Before final gluing, check the mitred edges to ensure they align seamlessly. Apply a small amount of glue to the mitred edges and press them together. Secure with masking tape or veneer tape to keep the joint tight while drying.

Adding cross-banding

Cross-banding is a visually striking technique that enhances the overall appearance of the chessboard by introducing a contrasting wood grain pattern around the piece. It is relatively simple to apply yet adds a touch of refinement and sophistication.

I like to use zebrano (zebrawood) and Macassar ebony for their bold grain patterns (**photo 11**), but these veneers are becoming harder to source. If those aren't available, a great alternative is to use a veneer that complements the rest of the piece, helping to tie the chessboard into a larger furniture project.

Begin by selecting veneer that is as wide as possible to minimise the number of joints. Cut 50mm wide strips to run along the outside of the checkerboard layon. As for the border, apply glue to the edge of the chessboard and carefully place the first piece of cross-banding in position. Secure with masking tape or veneer tape to hold it in place while drying.

Where two cross-banding pieces overlap at the corners, use a sharp knife to cut through both layers at once. This ensures a perfect seam with no gaps. Once cut, remove the excess material and fit the pieces back together for a seamless joint.

Before pressing the layon

Once the cross-banding is complete, the next step is to prepare the veneer layon for gluing onto the substrate. This step ensures that the chessboard adheres evenly and without air pockets, which is crucial for a strong and smooth final surface. After

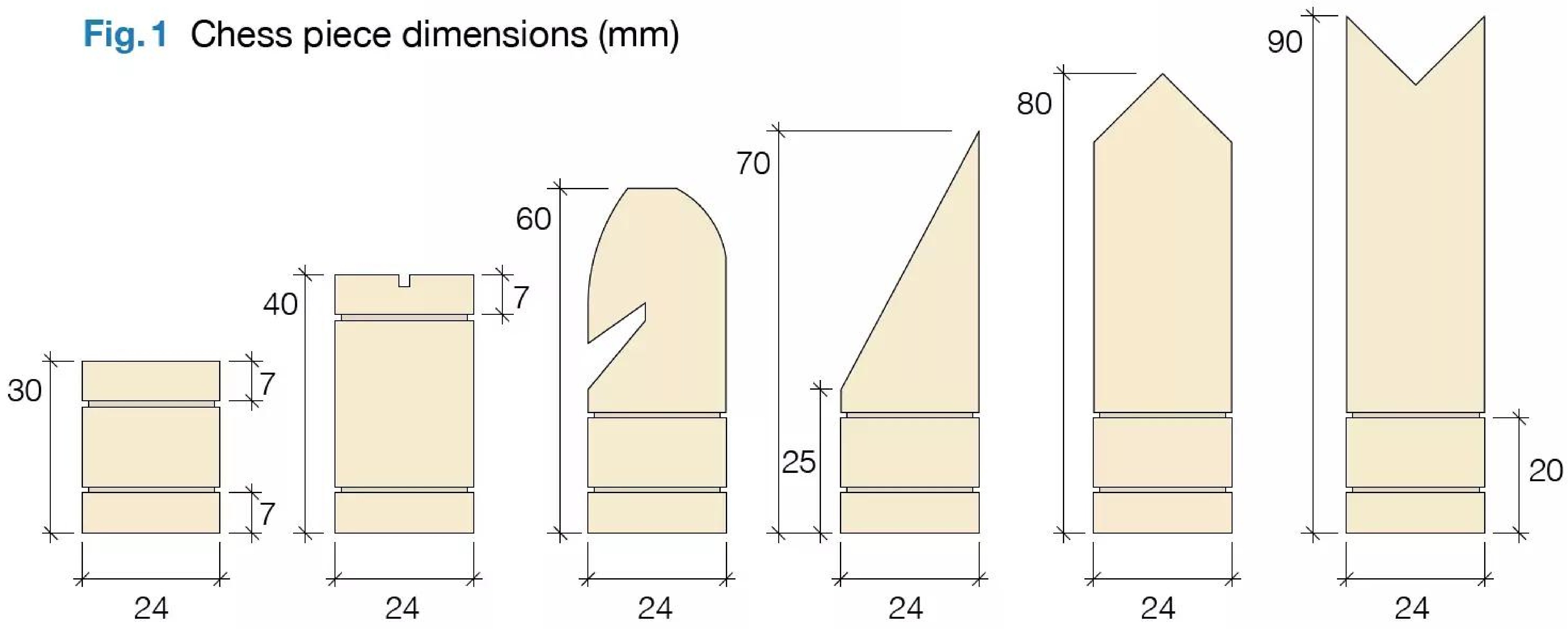
10. Options for edging the checkerboard layon include solid, inlay and cross-banded edgings.

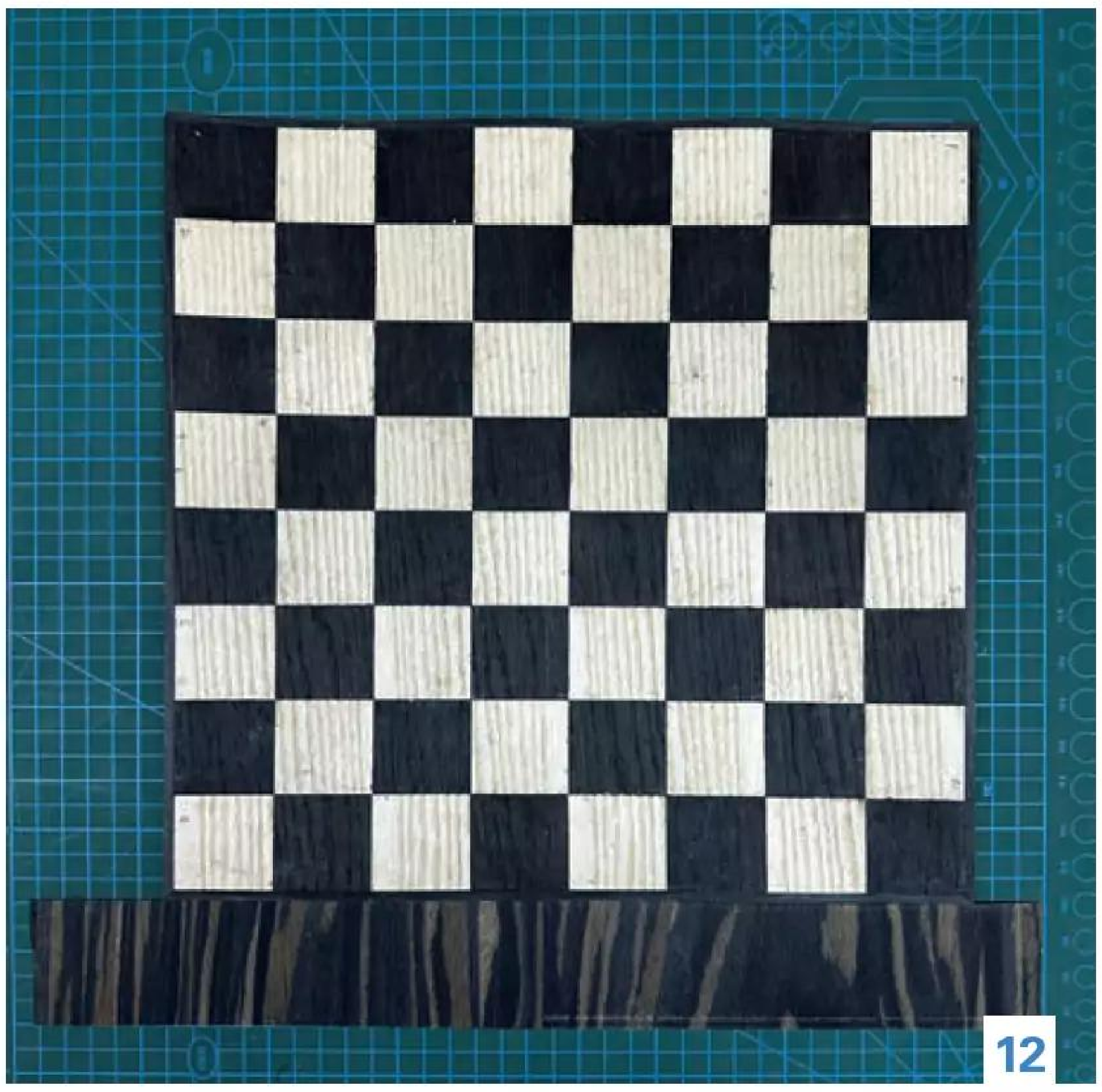
11. Macassar ebony and zebrano veneers give a dramatic cross-banded effect.

12. Cut strips for the cross-banding with an overhang to allow for mitring at the corners.

13. Variations on a chessboard theme are limitless – here black bean, rock maple and zebrano are shown.

Fig. 1 Chess piece dimensions (mm)

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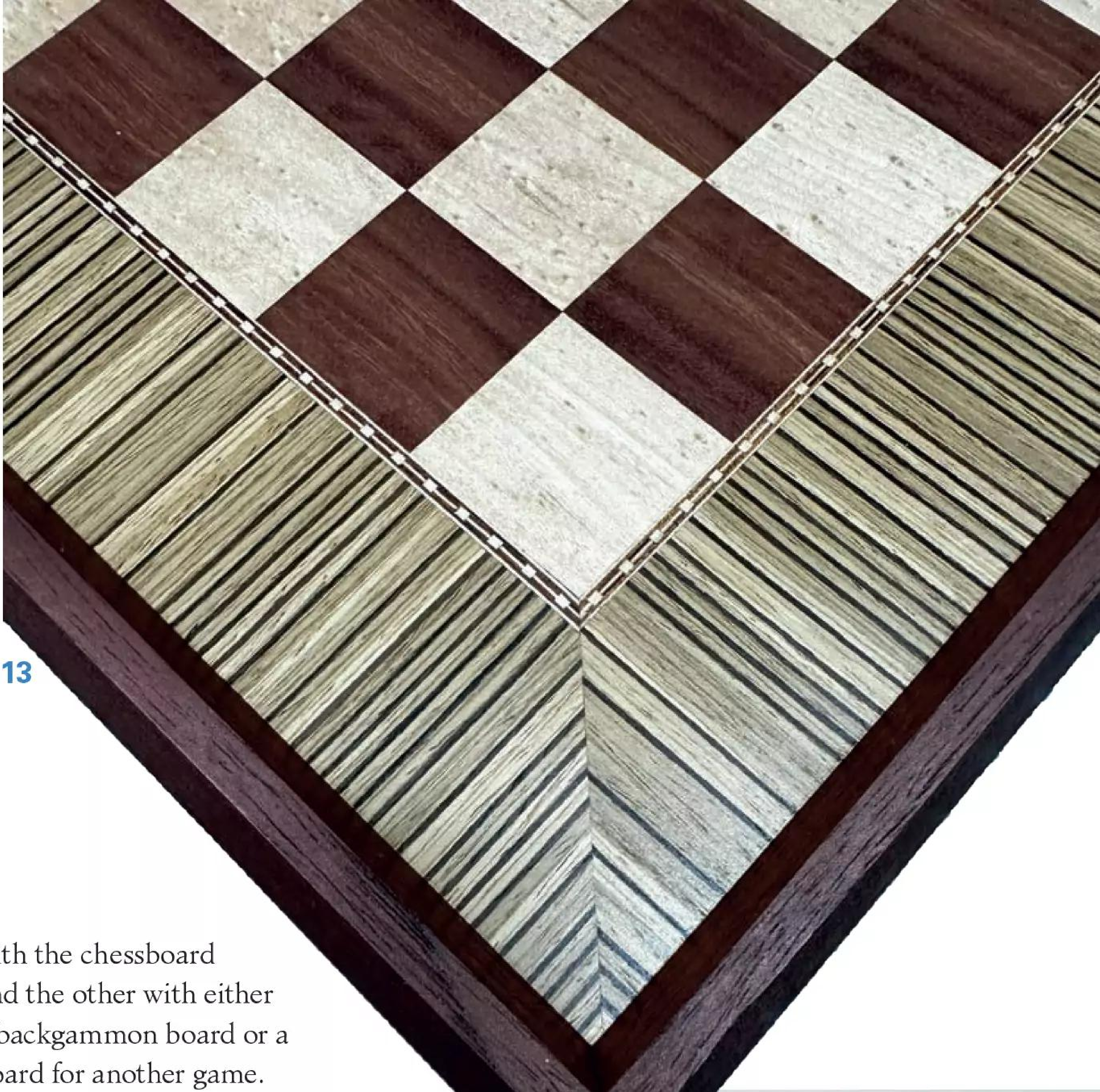
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finishing the cross-banding, allow the veneer sheet to rest and dry for at least one to two hours. This helps the glue set and stabilises the piece before further handling.

Choose the side with the least amount of tape and remove all the tape carefully. Apply a fresh layer of masking tape across the entire surface, leaving as little gap as possible between strips. Be mindful not to overlap the tape, as this can create uneven pressure when pressing the veneer onto the substrate. Overlapping tape may result in air pockets, leading to an uneven bond and potential lifting later.

Once one side is fully re-taped, remove all the tape from the other side – this will be the gluing surface. Ensure the veneer is clean and free of debris, as any leftover tape residue or dust can interfere with adhesion.

Gluing the layon

Now that the parquetry is fully prepared, it's time to glue and press it onto the substrate to create a stable and durable playing surface.

If the chessboard is part of a framed piece, I typically use 9mm MDF as the substrate because it provides a flat, stable surface with minimal movement. To create reversible boards, you can make a double-sided piece by veneering both sides – one side with the chessboard and the other with either a backgammon board or a board for another game.

It is important that you apply veneer to both sides of the substrate. The backing veneer prevents warping by ensuring equal tension on both sides of the substrate.

I use standard PVA glue, rather than cross-linking PVA (for example Titebond III), because standard PVA allows for easy post-pressing repairs – if air pockets form, they can be corrected with a bit of heat. Cross-linking PVA sets harder and makes it much more difficult to fix imperfections after pressing. You can also use other types of glues like hide glue or epoxy, but I would recommend not using expanding polyurethane as the glue might expand into little pockets of space if there are any gaps in your parquetry work.

Once the veneer is glued onto the substrate you can incorporate it into your furniture piece or simply surround the board with a lipping to create a freestanding chessboard.

Variations on a theme

Combing timber species with different borders will open up a range of ideas to explore. Experiment with different timber species and practise

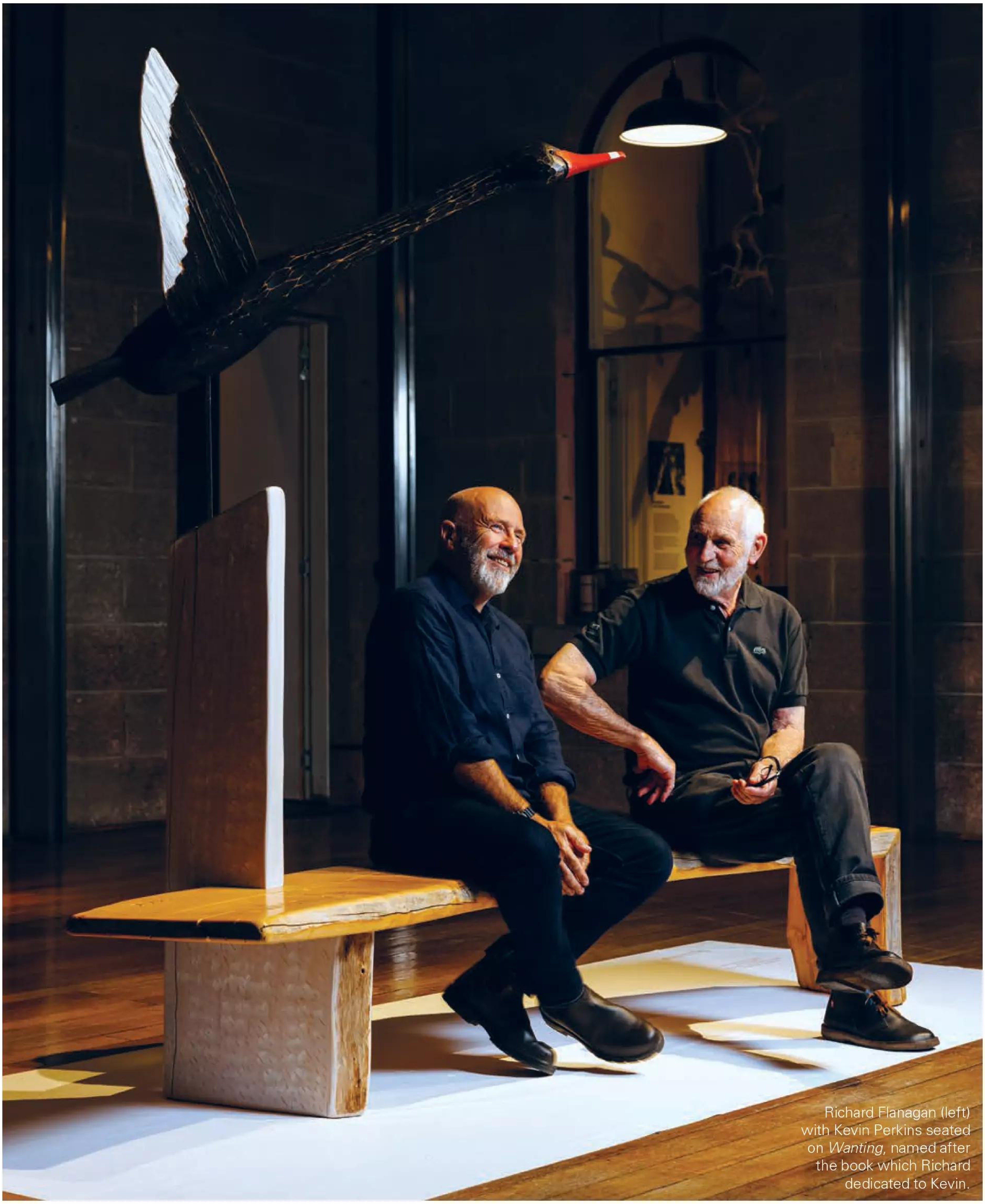
these simple processes to achieve the accuracy you need for a flawless chessboard result.

Photos: David Lim

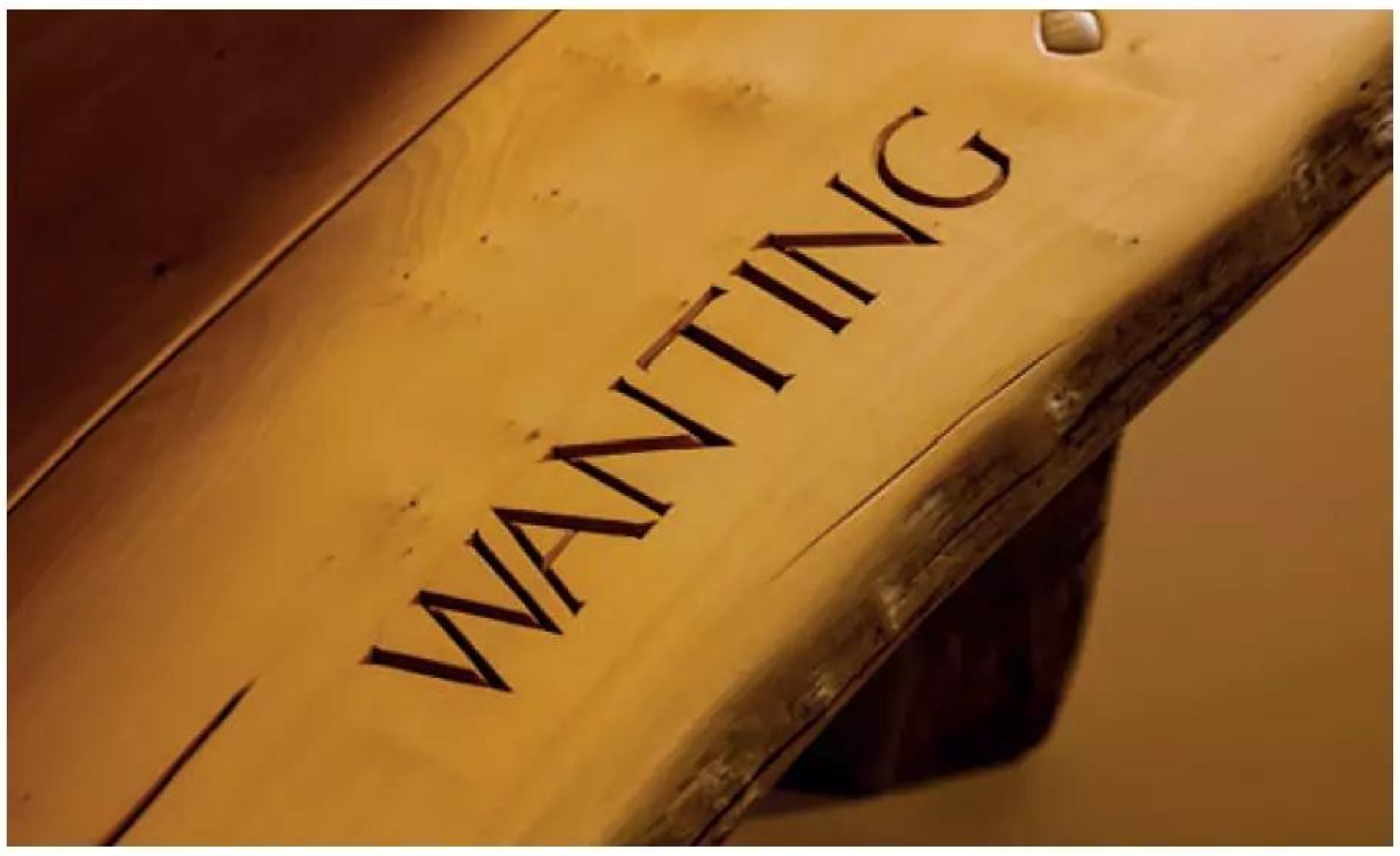
Architecturally trained and a builder by trade, David Lim @turnandplane is a designer maker and teacher of woodworking. He is an accredited member of Studio Woodworkers Australia and head of education at the Wood Academy Marrickville. His work can be found for sale in galleries around Australia and East Asia. In AWR#120 David wrote about creating marquetry patterns with a laser cutter.

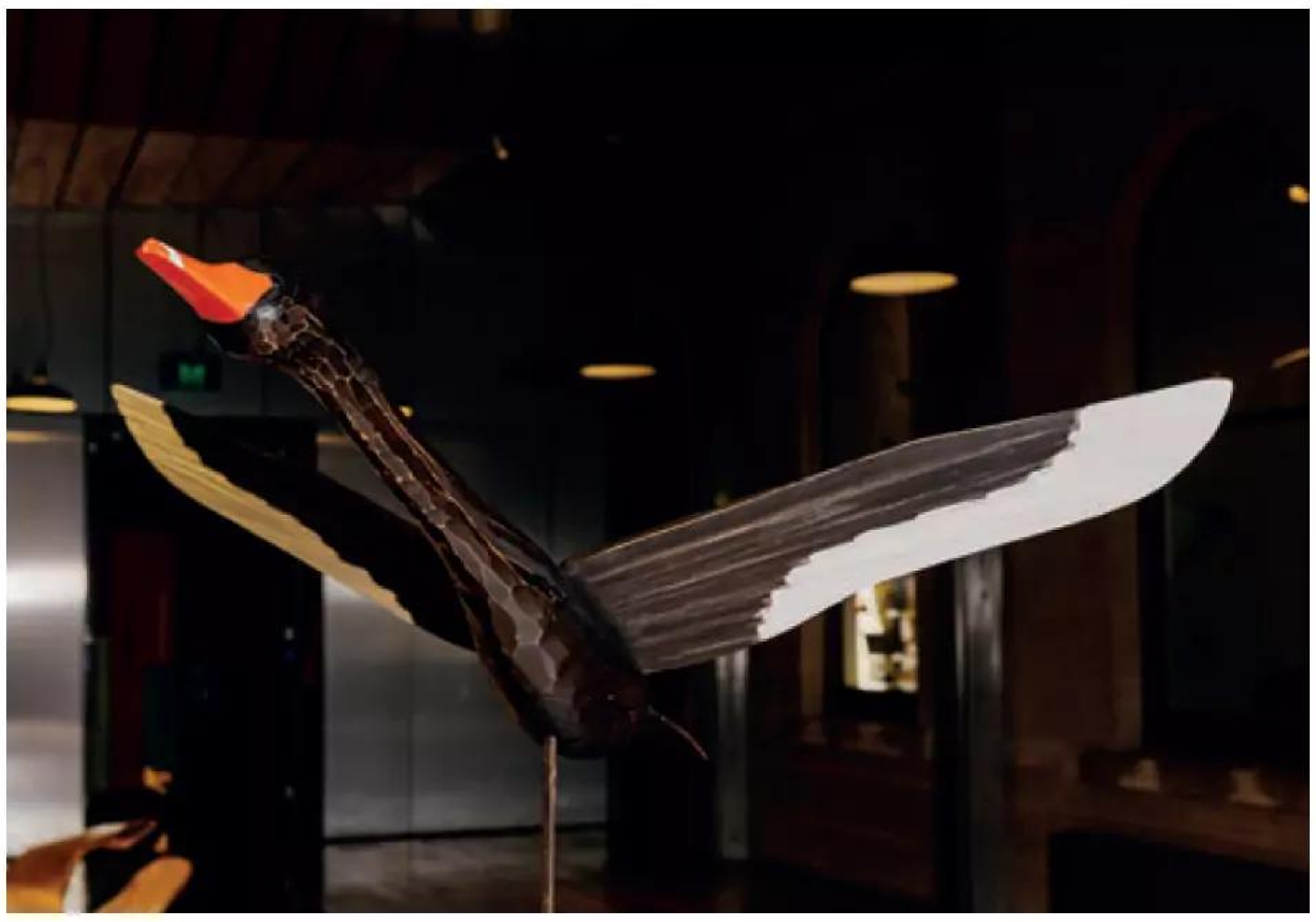
Written in Wood

Inspired by the writings of Richard Flanagan, Kevin Perkins' latest work is a love song to Tasmania and a testament to a long-standing friendship. Story by Linda Nathan.



Richard Flanagan (left) with Kevin Perkins seated on *Wanting*, named after the book which Richard dedicated to Kevin.





the bird that stole souls

Richard Flanagan

When wood and words come together, music can be made. The five works inspired by the writings of Richard Flanagan and made by Kevin Perkins are a love song to Tasmania that tell stories of origin and human values. Theirs is a friendship based on mutual appreciation and respect that goes back over 30 years.

'Those wonderful Tasmanian novels of Flan's I've re-interpreted out of great respect for his genius. He's just taken Tasmania to a huge new awareness, with a bigger audience, making people aware of Tasmania's uniqueness', said Kevin Perkins.

Titled *Written in Wood*, the exhibition features a series of benches with sculptural and carved elements that showed at the Tasmanian Museum and Art Gallery from December 2024 to March 2025. Once again, Kevin has used woods salvaged from logging and hydro operations, retaining some of their natural forms and surfaces, and incorporating incised letters and whittled carvings of native birds and fish. They relate to the themes of five of Richard Flanagan's books, and also to their personal connection.

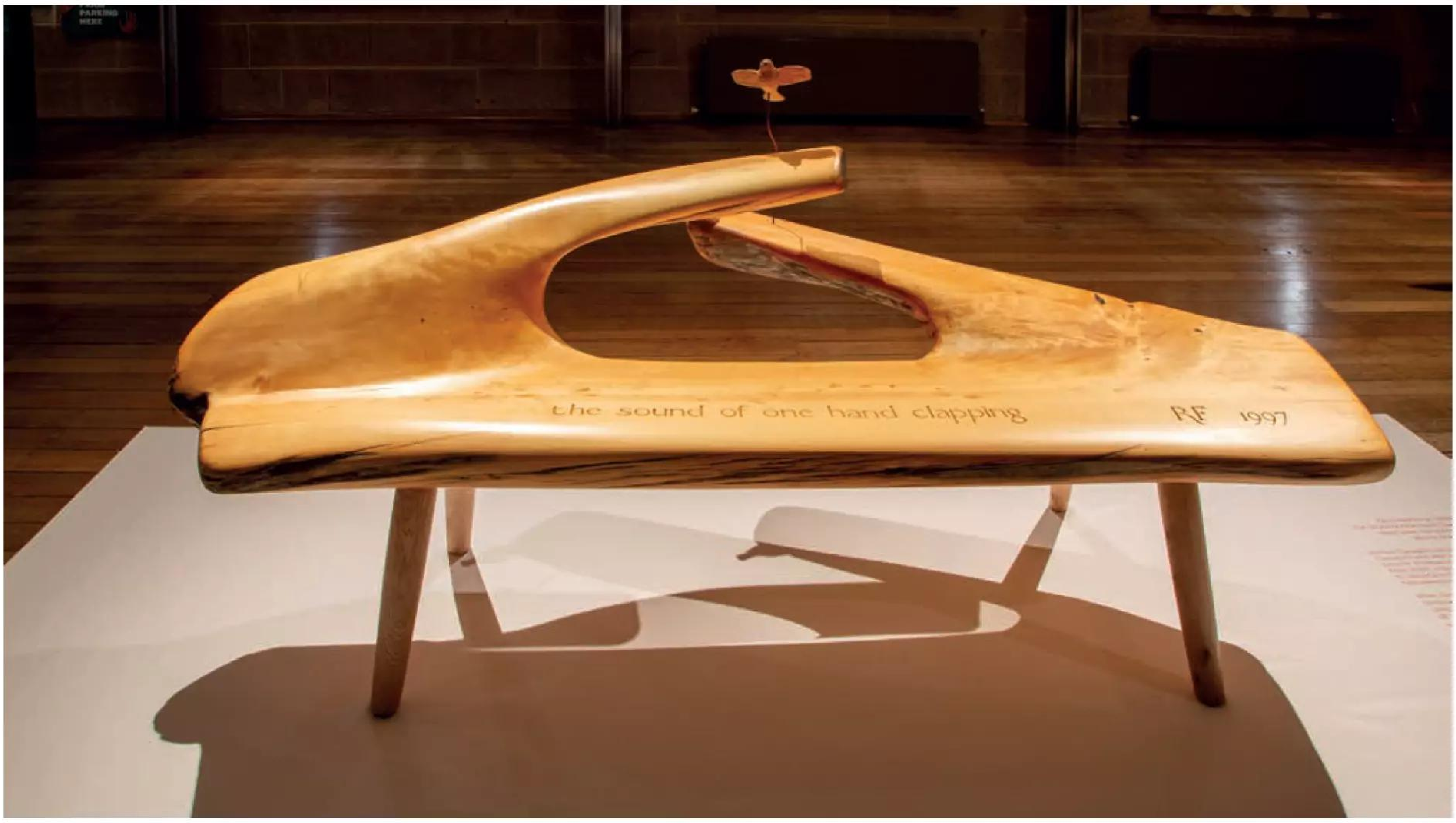
The work is quintessential Perkins. Now 80, Kevin started his journey at the age of 14 as a joiner/carpenter apprentice. He followed the path of his elder brother, and as it happened, one of his convict forebears, a joiner by trade sent to Van Diemen's Land for stealing a pair of clogs.

An apprentice of the year award allowed Kevin to study and work in New South Wales for three months before returning to Tasmania where he worked and taught and later established himself as an independent furniture maker.

Years later, a Churchill Fellowship took Kevin to America and England for further study. This taught him to trust the direction he was already taking. 'I felt that I didn't really learn a lot going away, because my journey was different, it reassured me of the path I was taking and gave me confidence to continue. I didn't have to compete. I occupied a small vacuum that no one had sat

This page: *Wanting bench seat*, 2023, 2800 x 900 x 2000mm high Huon pine bench with King William pine black-stained swan flying above. 'The seat slab/log was salvaged from Lake Burbury in the early 1990s. A hard-grown tree with lots of tension but providing a good surface for incising text. Richard Flanagan dedicated this novel to me.'

Extract from the novel: 'As they approached house number 17, Mathinna halted for a moment, staring at the sky above, and seemed transfixed by some nameless terror. The Protector was about to rush past her when he saw the omen the natives feared the most, the bird that stole souls, a black swan swooping down towards the brick terraces.'



the sound of one hand clapping

This page: *The Sound of One Hand Clapping*, 2023, 2300 x 1000 x 1200mm high, Huon pine bench with carved pink robins and incised lettering.

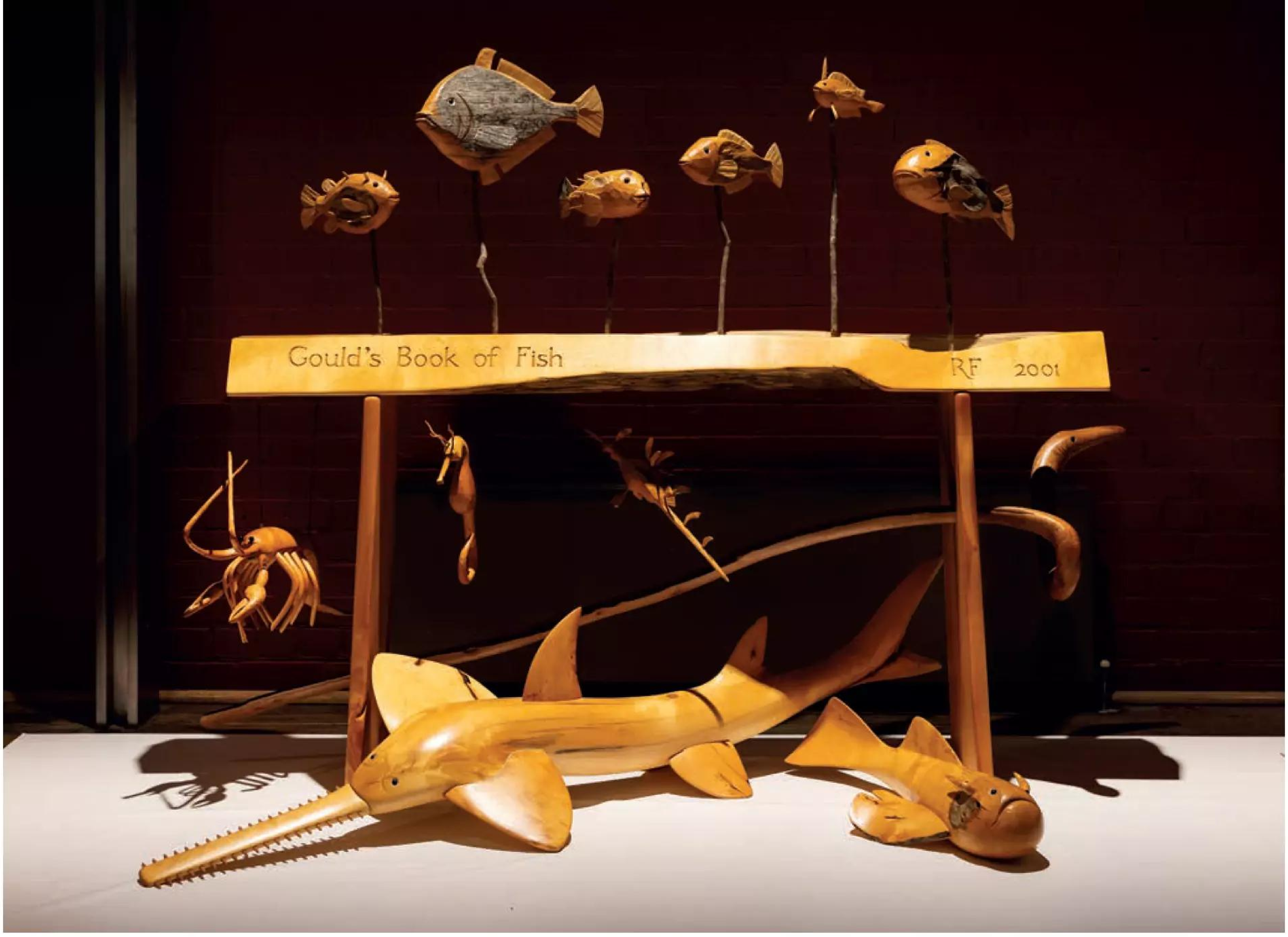
'Richard and Rolf de Heer directed a film of this book, with the same title. The organic Huon pine form was salvaged from Lake Burbury by Bernie Bradshaw in the late 1980s. Merv Gray and I selected a truckload of Huon logs stock-piled at his mill prior to it also being flooded. After Merv passed away, his daughter asked me to make a piece of work to commemorate him. I picked out this log then. It ended up being (this piece) with two embracing arms and I thought I could do that for one of Flan's books and that became the reason for doing others. The whittled pink robins are a rare and beautiful visitor to my place. The novel is a tale of an estranged daughter and father finding each other when she falls pregnant. It is a story of hope.'

in before, and that local pantry of woods and our stories was special to me, and I could have a unique life exploring those.'

Over the decades Kevin Perkins has designed and made for many public commissions and continued his 'personal' work which focuses on highlighting the natural beauty of salvaged wood, 'specialty' Tasmanian species often left after logging operations.

In particular, Kevin's work is known and loved for its sculptural and graphic elements. His *Cape Barren bookcases* are topped with carvings of those birds – a homage to their survival amidst environmental pressures. *Thylacine* cabinets feature saw-toothed drawer front overlays that contrast Huon pine and myrtle. The work shown for *Written in Wood* is adorned with small and large birds, fish and a range of sea creatures – all of which speak of appreciation for nature.

Kevin has worked extensively with respected architects such as Robert Morris-Nunn, and in particular Aldo Giurgola, architect of Parliament



House in Canberra. Kevin designed and made the furniture for the prime minister's office.

In his exhibition opening speech, Richard Flanagan said: 'On the day the new parliament house was opened, Aldo Guirgola – memorably and accurately – described Kevin Perkins as an artist who could make wood sing.'

Richard also spoke of their connection. 'I first met Kev in 1992 when he, I and the celebrated architect Robert Morris-Nunn came together to make the Strahan Visitor Centre, an interpretation centre celebrating 40,000 years of human history in south-west Tasmania. I had never before met a man who more put me in mind of a wedge tailed eagle. For Kev was elemental and unique. I was struck by his piercing, darting gaze that seemed to see everything, his extraordinary combination of ease and restless surging energy, circling and circling before swooping down to erupt from the earth with another cabinet, table, chair, or sculpture held aloft.'

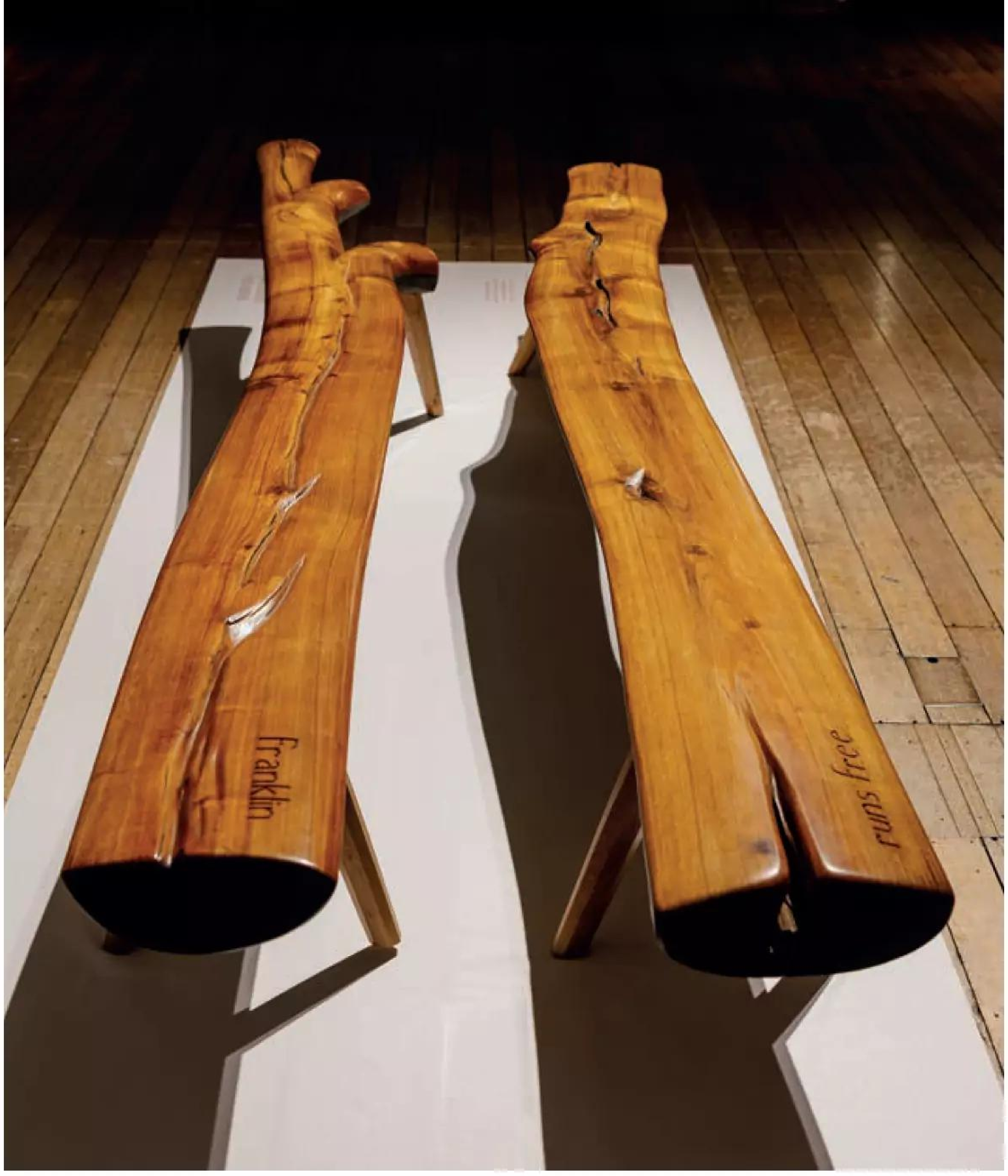
Richard Flanagan was the historian for the Strahan Centre project, and at the time, also worked as river guide. When they met, Kevin recalls, 'Richard promptly said we need to raft the Franklin, of which he'd been down probably a dozen times or more. At that stage he used to take groups of people down.'

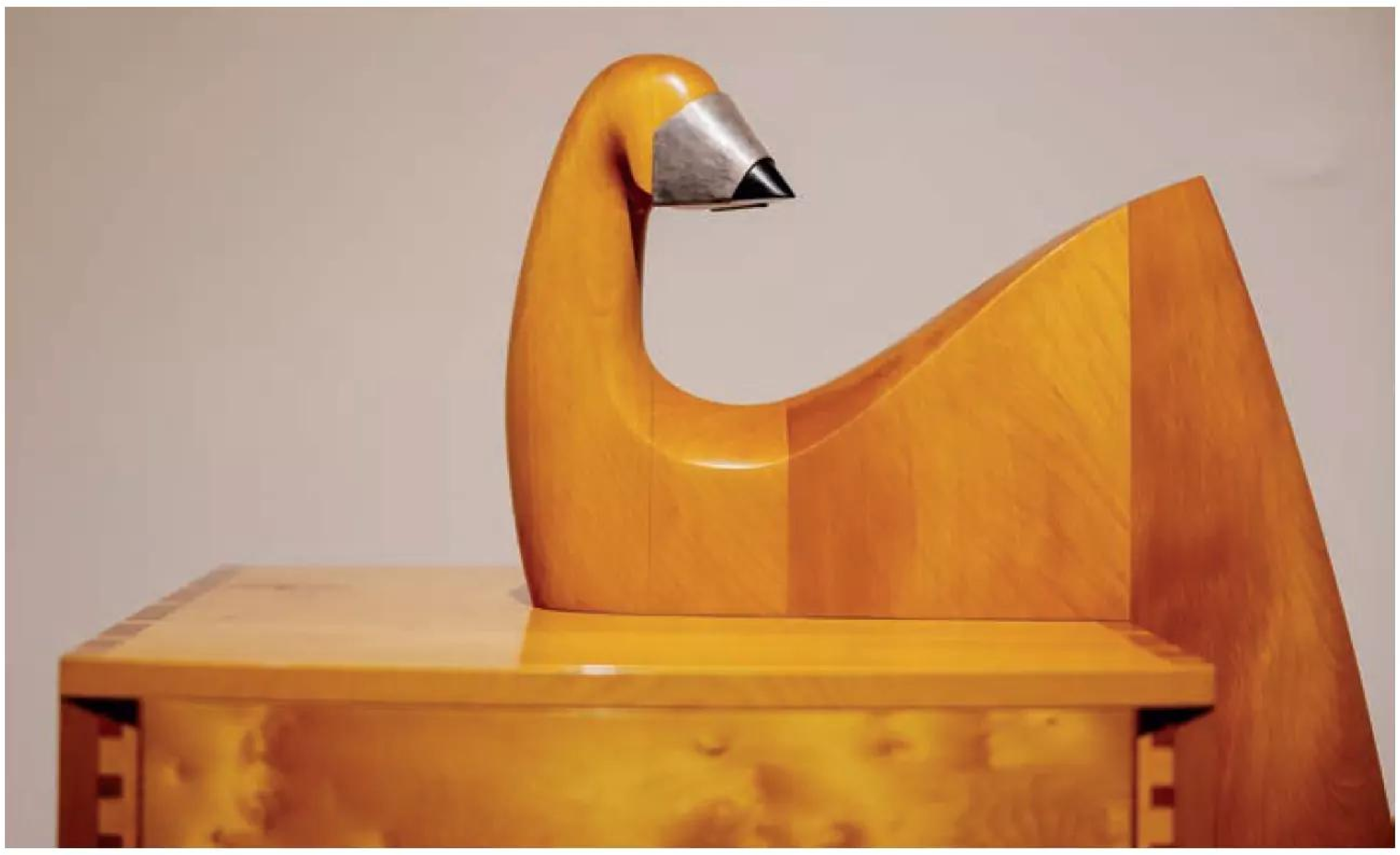
They seemed to hit it off right from the start. 'Well, he's from the West Coast, and I'm from the north-west coast and we both live in the south', said Kevin. Richard would stay at

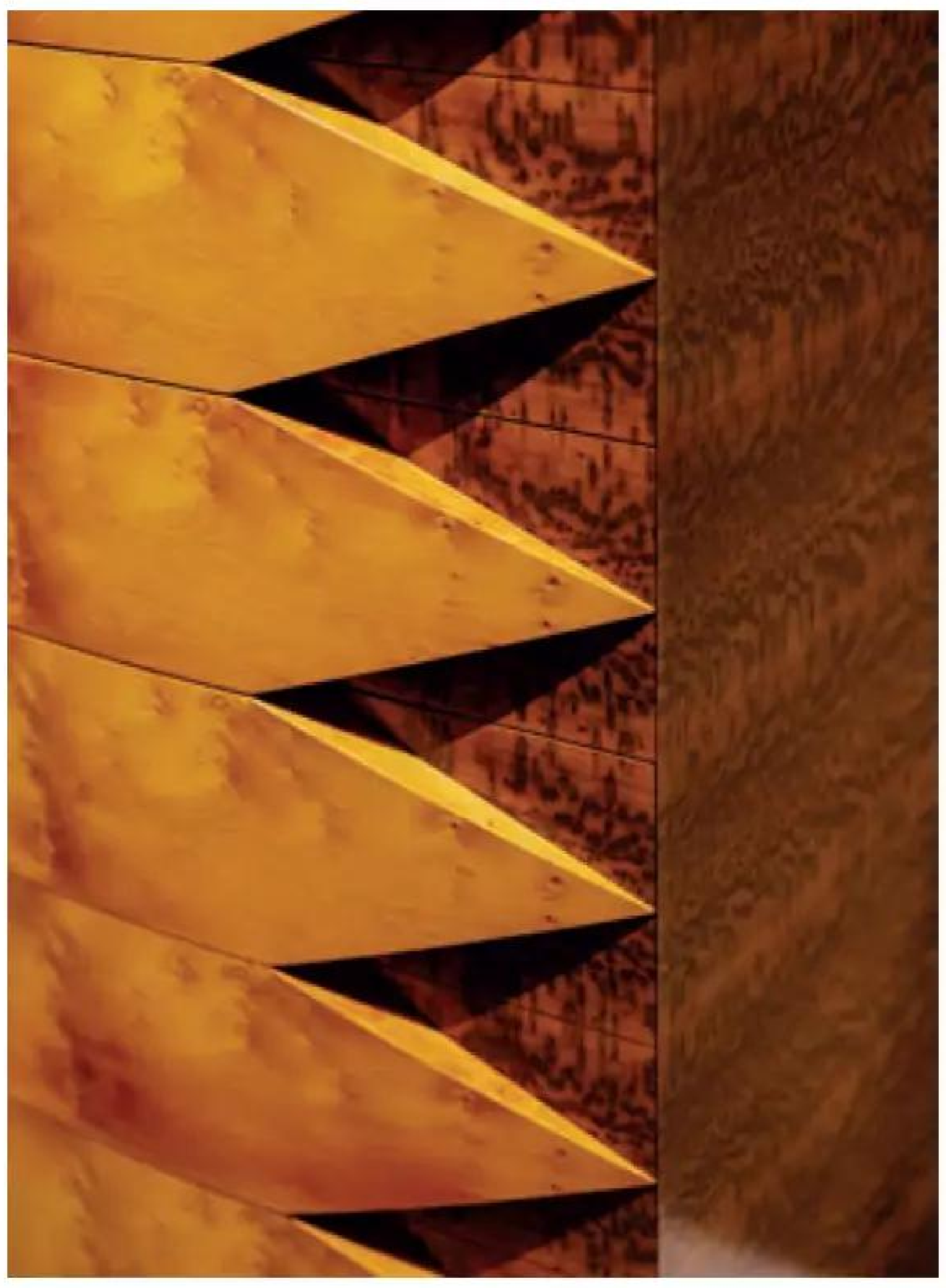
Above: *Gould's Book of Fish*, 2023, 2500 x 1600 x 1700mm high. 'A Huon pine side table with incised lettering and carvings in Huon, King William pine, horizontal and ebony. The Huon pine and King William pine were salvaged from the Crotty region, West Coast of Tasmania. The 12 paintings of fish by William Buelow Gould, convict artist on Sarah Island, Macquarie Harbour (1822–1833) are held in the Allport Library, Hobart. These paintings inspired Richard Flanagan's novel of the same name, where in caricature, he matched twelve paintings of fish by Gould to the people in authority on Sarah Island.'

Right and below: *Death of a River Guide*, 2023, 'bookmatched' Tasmanian blackwood benches, 3730 x 300 x 460mm high.

'Grown and harvested on my property, split in two to allow numerous configurations – arching, at 90°, or end to end. Inspired by rafting the Franklin River with Richard in 1990. There were lots of Huon pine and blackwood lining the heavily rain-forested banks. It also references the dark tannin-stained river water and the river-worn rocks and logs.'







Kevin's personal work is known for its sculptural details.

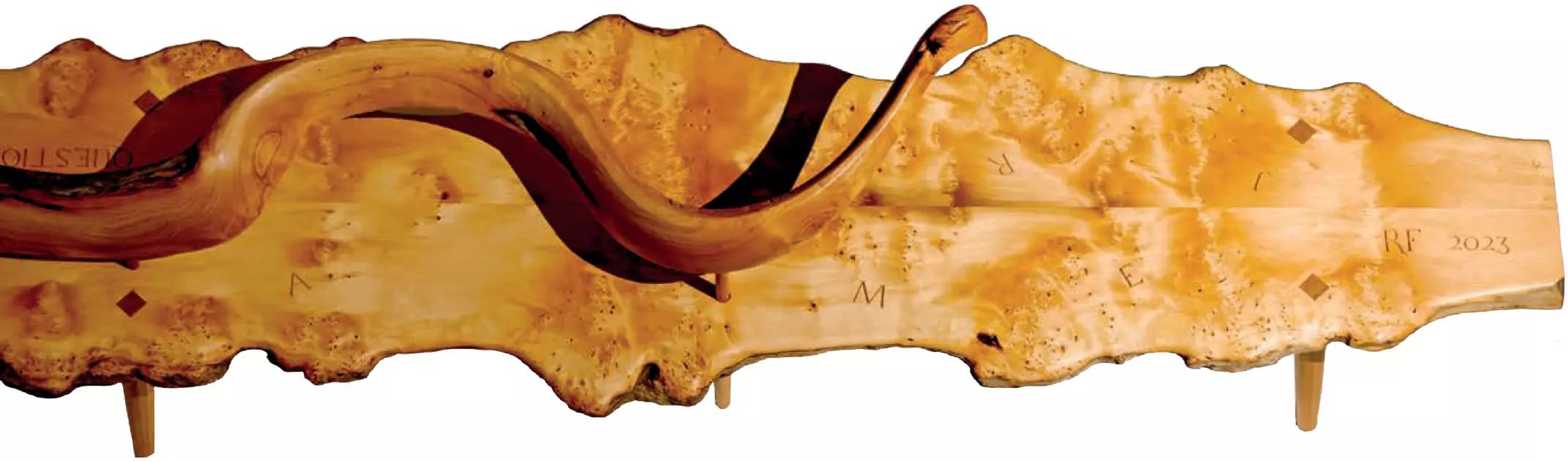
Above:
Cape Barren Goose chest in myrtle

Thylacine drawer chest in Huon pine and Tasmanian tiger myrtle

Kevin's place during the Strahan Centre project and their families grew close from that time. 'It's been a very close friendship and still is,' said Kevin.

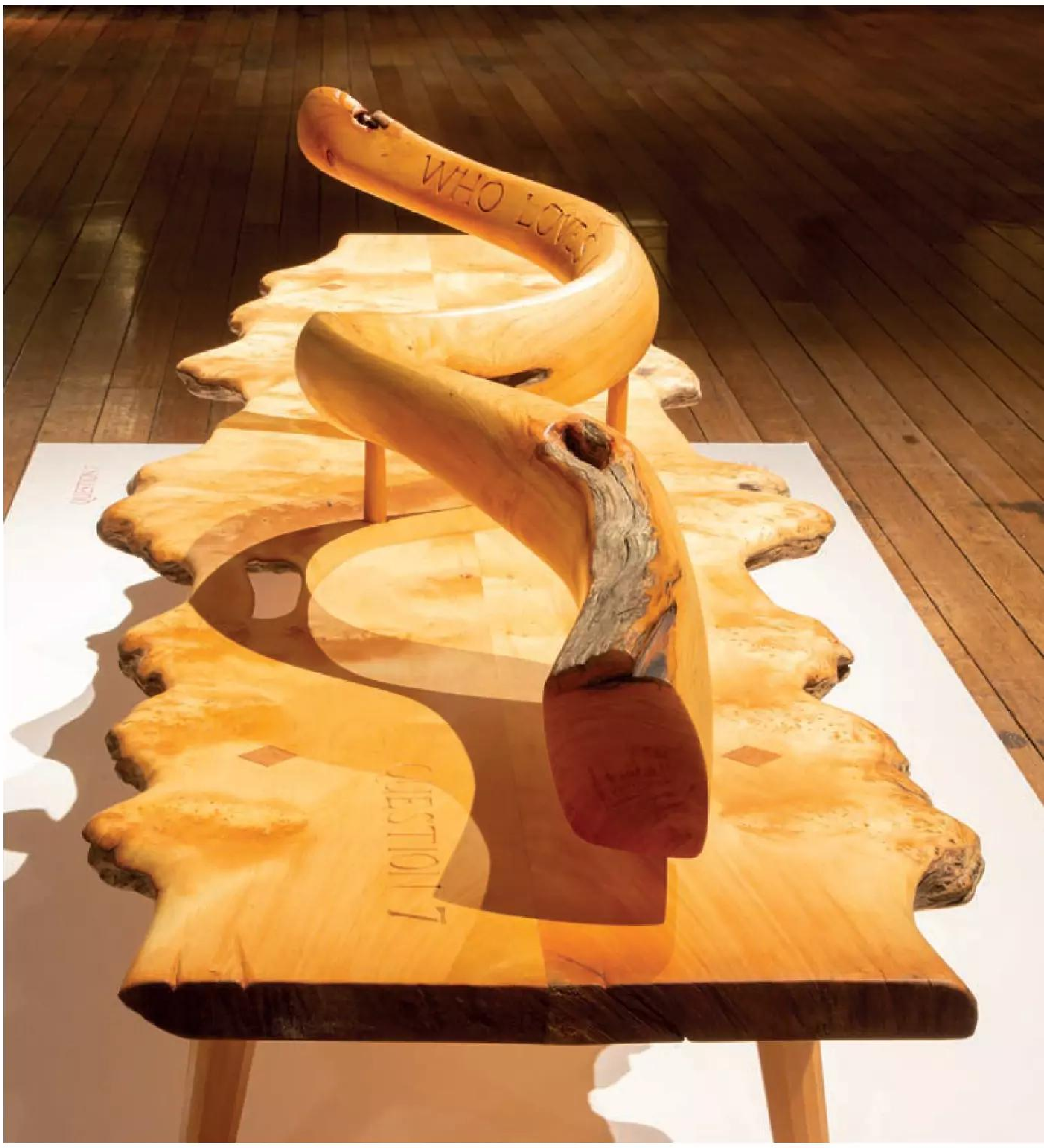
The idea of making works inspired by Richard's books seemed to grow organically. 'When Richard wrote 'Wanting' he dedicated it to me. He said it was the most crafted work he'd done. And I had a little bit of a reputation at that time, and Richard had a little bit of a reputation, and I guess he'd taken on a little bit of how I live. How I make a cabinet is like writing a book. You've got to have good structure.'

Acknowledging the origin of the wood and its unique properties has always been important to Kevin. 'On a fair bit of my work I leave a bit of rawness just to show where things come from. In the logging days, the piners were only after straight timber for boats and they left all the other headwood and bentwood and rootwood, but they're still quite usable even after a hundred years of



This page: *Question 7*, 2024, 3020 x 860 x 830mm high. 'Birdseye Huon pine bookmatched boards with a serpentine (line of beauty) naturally-grown Huon pine backrest, horizontal multi-faceted legs and incised lettering.'

'The Huon pine was salvaged from Lake Burbury prior to its flooding in the early 1990s. This is at once a love song to Tasmania and to his parents, a melding of dreams, history, place and memory. A daisy chain of events reaches fusion when Richard as a young man finds himself trapped in a rapid on a wild river not knowing if he is to live or to die.'



being on the ground, and I've always thought that's such a wonderful resource.'

'As a young apprentice joiner, I grew up buying timber off the rack to make a sash or a window, or a cupboard or table. But I always wanted to see where trees grew, what their shade of green represented when you started cutting. Once you get off the straight stem, you've got all this turbulent, wonderful, figured wood, and in different shades that gives you a huge palette to work with. Making with salvaged wood, you're giving it a lot more respect that just leaving it on the ground.'

After 60 years as a maker, Kevin's work still carries the same wider meaning about knowing the origin and value of the materials you work with, and acknowledging our connections to the environment, family and friends.

Photos by Jesse Hunniford and Simon Cuthbert, courtesy Kevin Perkins and Tasmanian Museum and Art Gallery, see www.tmag.tas.gov.au.

Finishing by Species

All things are not equal. To achieve a uniform, soft and glowing finish on small objects you need to adjust your technique for each species and piece of wood. Story by Carol Russell.

One of the things that keeps me so engaged with woodcarving, is the different personalities of the various timber species and the amazing variation within those species. Each piece I carve is unique in grain, colour and texture.

Considerations

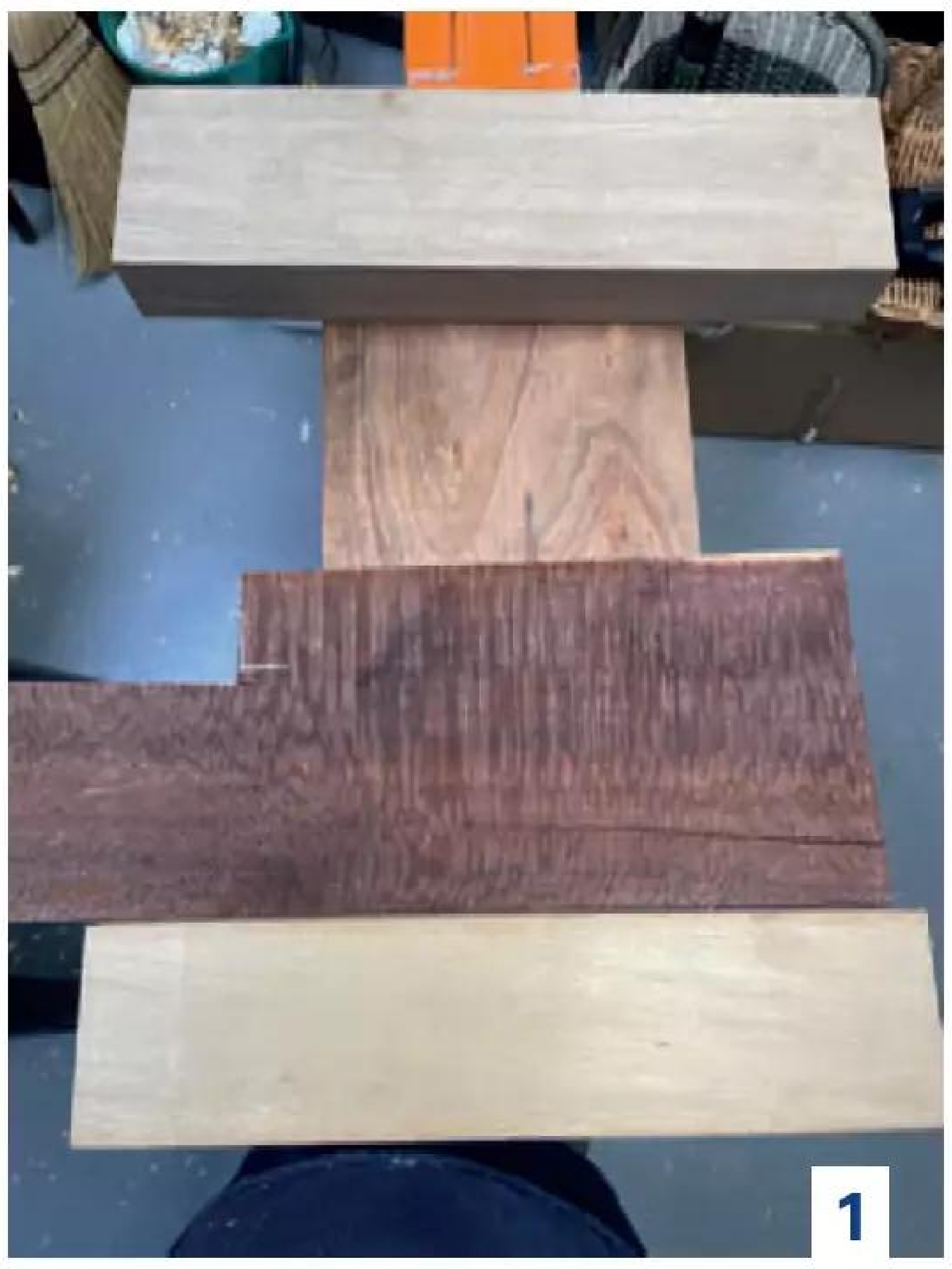
Deciding how to finish carvings is rarely straightforward because it depends on the features and grain you're dealing with. Each timber species has a unique set of characteristics and the finish you choose, and how to apply it, will depend on several things:

- Is it a dark or light timber?
- Is the grain open, or dense and fine grained?
- Is the wood compressed, or does it contain burl or spalting?
- Is the timber naturally oily or waxy, or is it dry and a bit papery?
- Does the timber have a strong medullary ray, and if so, is it quartersawn where the rays are elongated?
- Is the timber highly figured or inconsistent in density as it might be if it has spalting or strongly defined growth rings?
- Do I want a low sheen finish or a highlighted, slightly shinier one?

Materials

I'll be using blonde de-waxed shellac, chosen for its ability to keep a more natural colour. I make a finishing wax using one of the seed oils such as flaxseed, hemp seed or grapeseed and beeswax. My recipe is one part beeswax and three parts of any of these oils. I heat the oil in a pan and add the wax and stir it through, it's a lovely mix. There's plenty of other recipes around but I really like this one, the seed oils will cure and the finished surface won't be oily to the touch.

I'm a bit stuck in my ways with these products, I know them well and understand how they work with all the different timber species. However, if you prefer one of the plant-based oils on the market and don't want to use shellac, these preparation techniques will also work.



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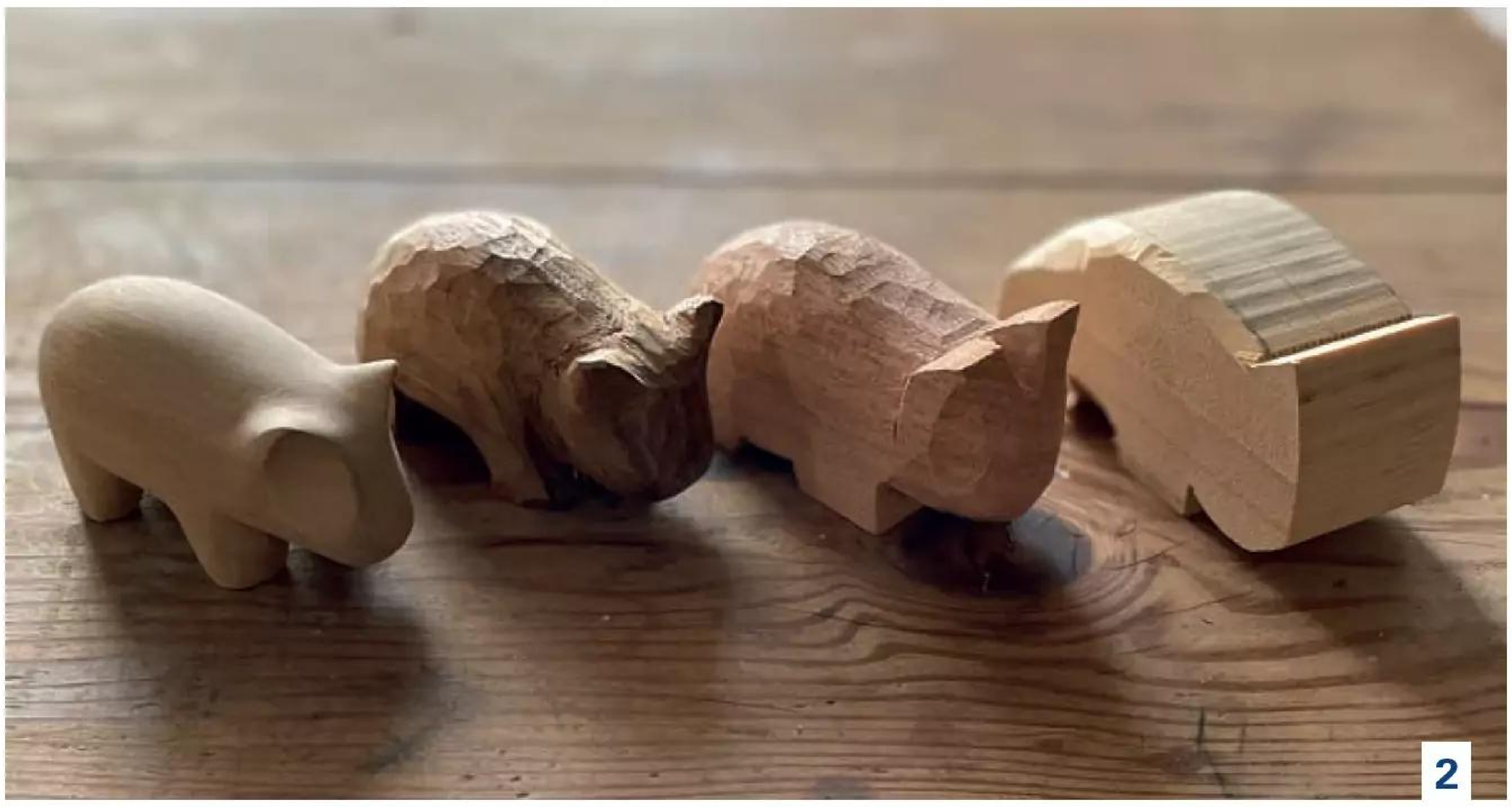

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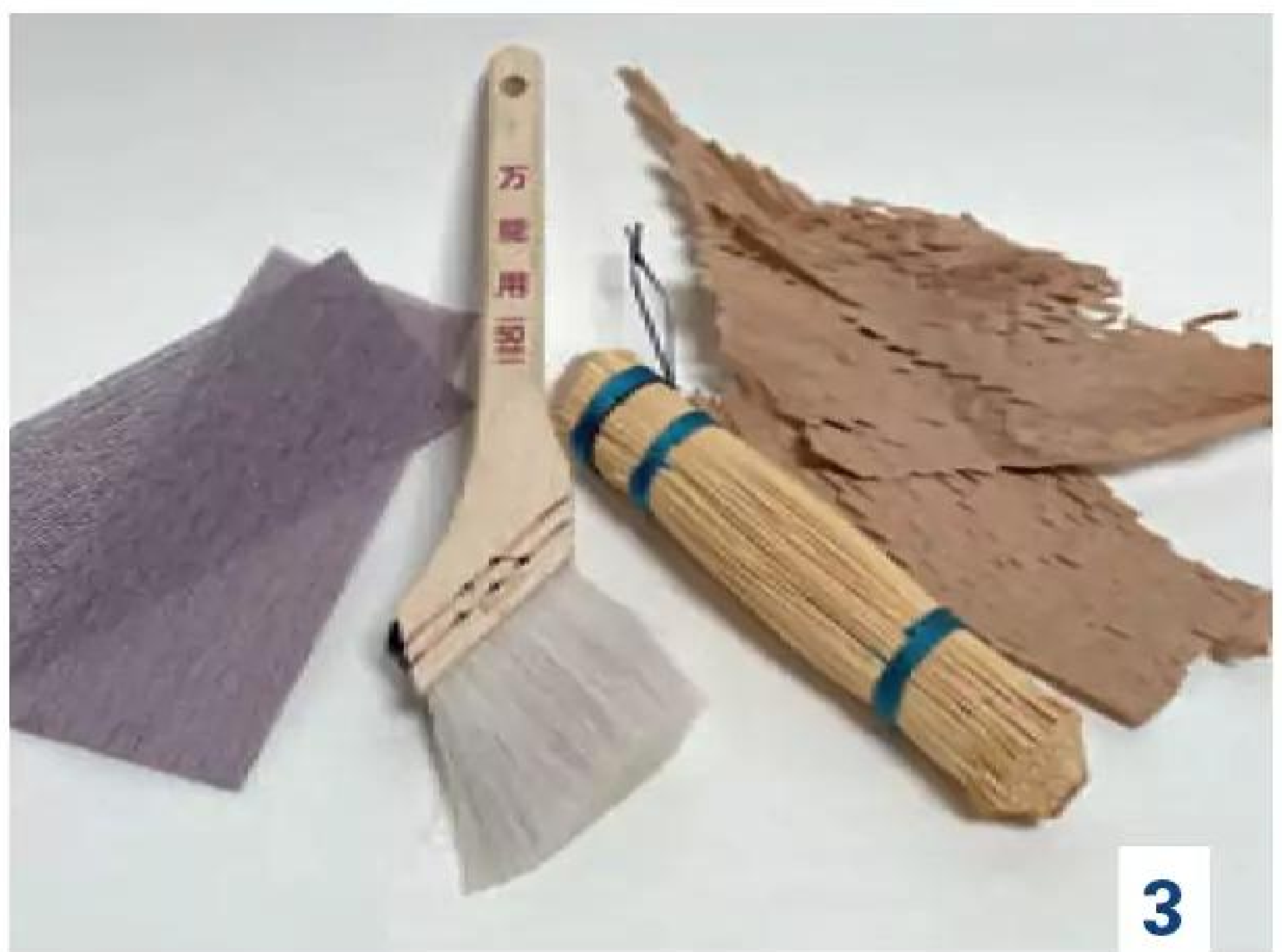

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No two pieces are the same

The look of the timber will not only vary depending on species but also how a log was cut, how old the tree is, and whether the grain is under tension, creating compressed grain or fiddleback.

Huon pine for example can be as light as paper or as hard as a rock, so it's important to know that within the same species the variation can be vast and the ability to absorb or repel a finish is affected. Shellac is excellent for evening up the texture of the surface, such as you'll get with spalting or quartersawn timber with broad medullary rays. It hardens the fibres and fills the softer more absorbent areas.

Wombat species

I've carved four of my little wombat forms in Australian timber species which represent many of the common features you'll encounter (**photos 1, 2**). Even if you're using recycled timber and don't know the species, you can apply these principles by observing its grain and dominant characteristics.

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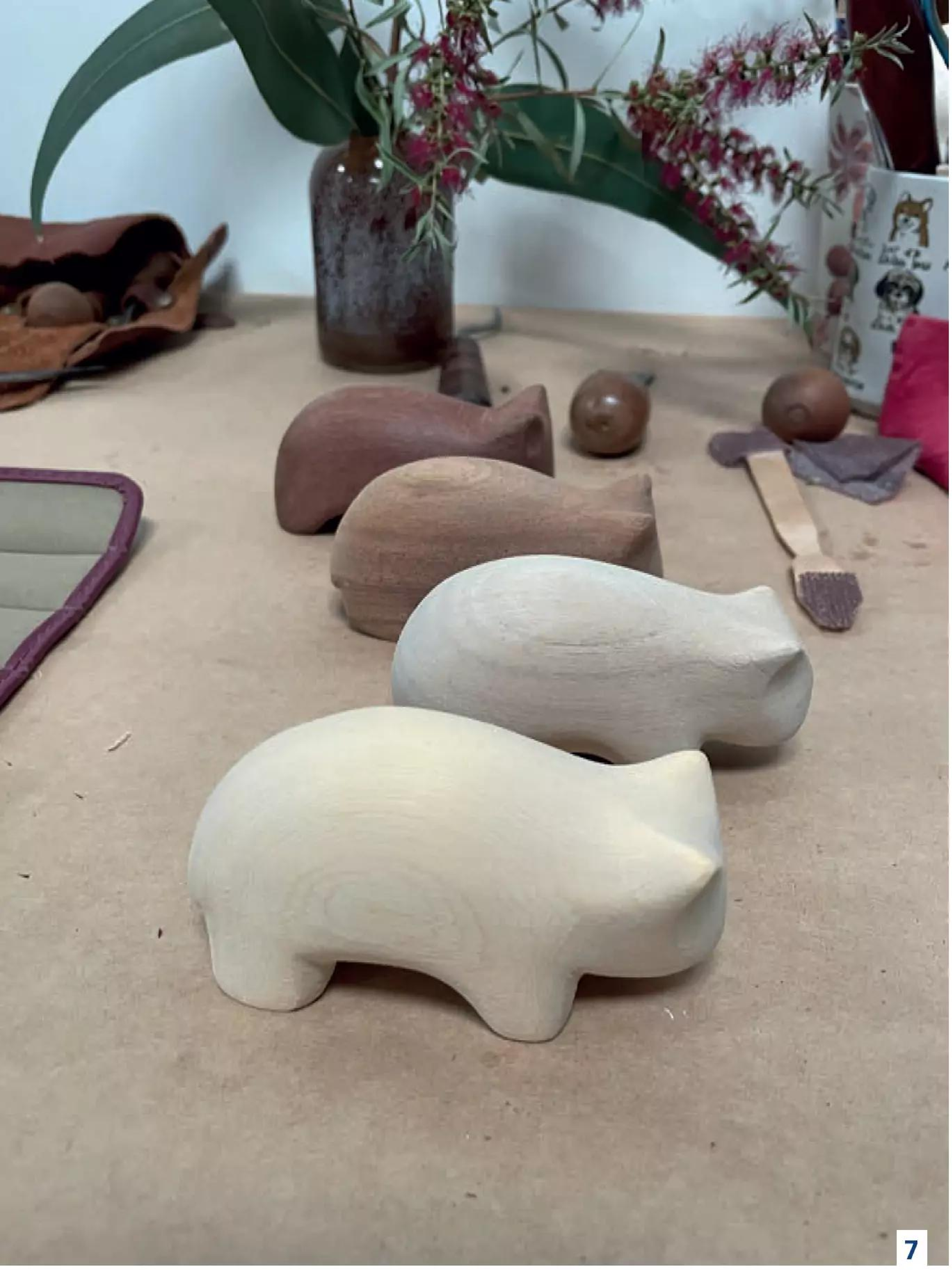
Main: Different species can require a different approach to finishing. Wombat samples in white beech, beefwood, Tasmanian blackwood and Huon pine.

1. Four species selected as examples of different characteristics, from top: white beech, blackwood, beefwood and Huon pine.
2. Each species has their own carving characteristics.
3. Tools for sanding and burnishing: open mesh sandpaper, straw dusting off brush, Japanese straw uzukuri, packing paper.
4. Sandpaper can leave scratches which need to be removed.
5. Using methylated spirits to raise the grain instead of water can work better for some species.
6. A sanded finish for all the wombats was chosen to highlight and compare results.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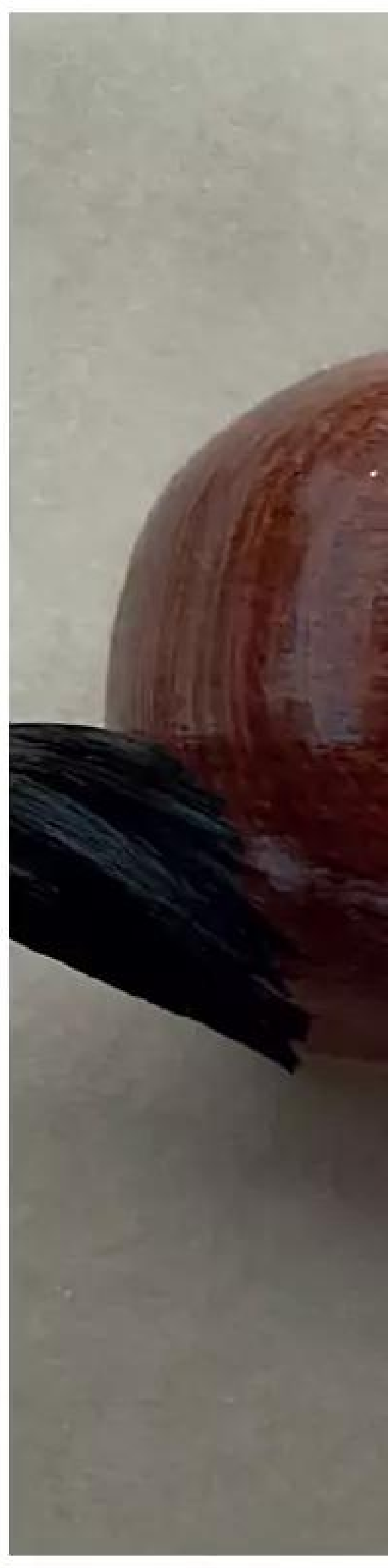

For my wombat family I've chosen:

- Tasmanian blackwood (*Acacia melanoxylon*): Hard, open grain, dark with strong figure, dryish, not oily or waxy
- Huon pine (*Lagarostrobos franklinii*): Very light, fine, variable grain with distinctive figure, oily
- White beech (*Gmelina leichardtii*): Light in colour (sometimes greyish), grainy but also waxy
- Quartersawn beefwood (*Grevillia striata*): Very hard and dense, dark reddish with strong medullary rays, quartersawn to show broad flecks. Neither waxy nor papery but has inconsistent texture between the rays.

Sanding stages are key

For these wombat forms, I choose smooth, sanded surfaces to highlight grain, line and shadow. I sand to at least 400 grit. I prefer to use a good quality mesh sandpaper; it's slower to degrade, the particles stay sharp for longer and the scratches are easier to remove (**photo 3**).

I spend a lot of time on the coarser grades such as 120 grit. It's important to me that all the tool marks I want to sand out are taken away at this point (**photo 4**). If the timber is very hard or the tool marks too pronounced, I'll start with a rasp to level them off.

The finer sandpaper grades then just remove the scratches from the coarser grades. I sometimes use 80 grit mesh sandpaper, but the larger particles leave deep scratches so a lot of care must be taken to make sure there are none left that will show in the final finish (**photo 5)**.

After the 120 grit, I wet the piece down to raise the grain and also highlight any flaws I might have missed. Recently I've switched to applying methylated spirits with a brush (100% denatured alcohol, not the hardware variety) instead of water (**photo 6**).

I've noticed that wetting down some timbers with water can take way too long to dry and can also stain. Tasmanian blackwood, for example can be tricky to wet down, the tannin can react with water and leave a greenish tinge.

Huon pine can end up a mess as the oiliness of the timber takes

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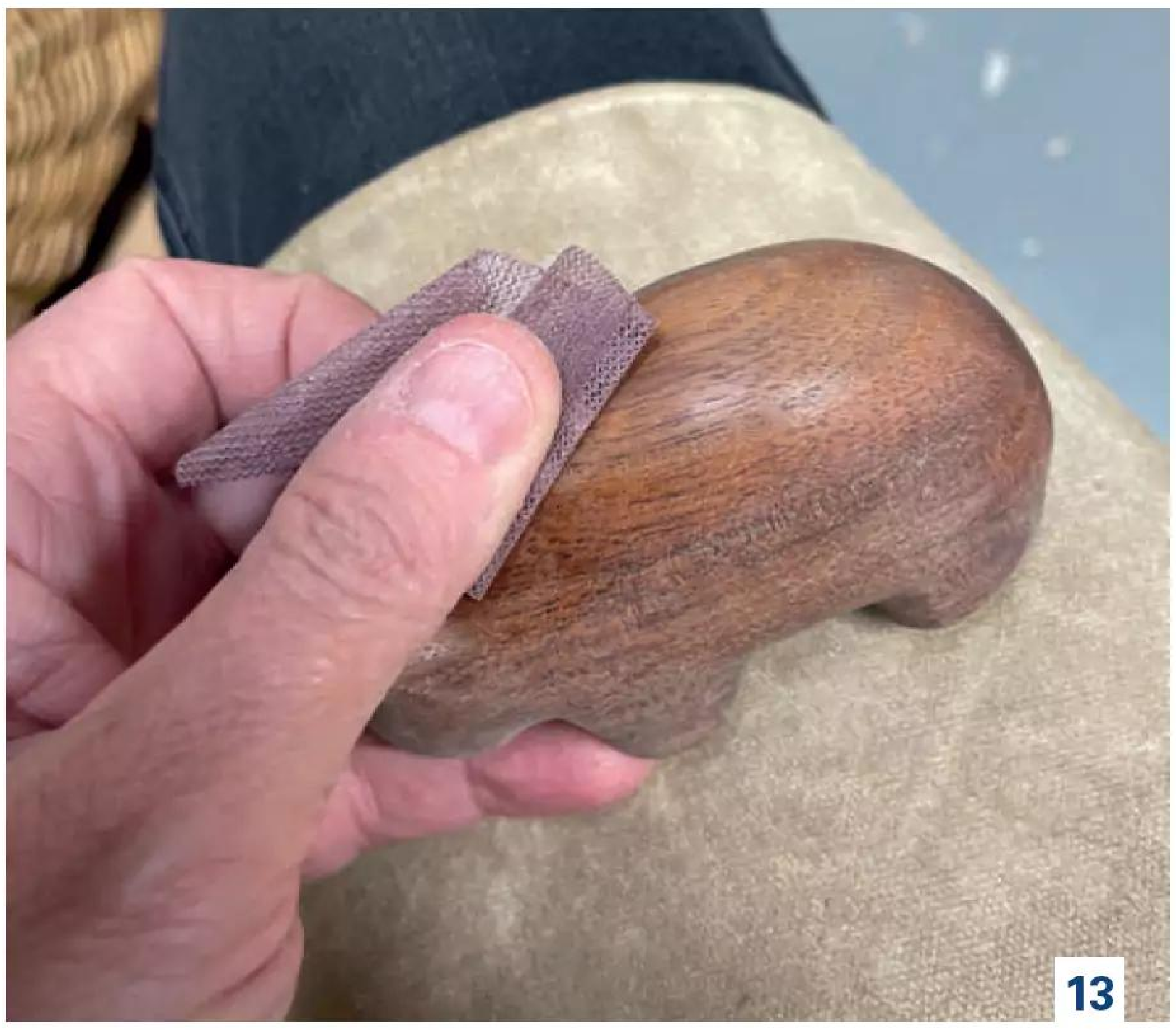
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- **7.** All sanded and ready for finish application.
- **8.** Burnishing brings a glow to oily woods like Huon pine.
- **9.** Burnished beefwood shows off the grain.
- **10, 11.** The medullary rays of the beefwood are beautiful after the first coat of shellac.
- **12.** Using shellac to raise the grain on the blackwood.
- **13.** Rubbing back the blackwood between coats.

a long time to dry and staining from contaminated surfaces, dirty hands and pencil marks can be hard to remove. Methylated spirits evaporates very quickly, shows the faults, raises the grain and won't discolour the surface.

After the first wet down, I move onto 180 grit sandpaper. These stages are really the key to a good finish, the result will only be as good as the preparation.

From now on, you're focussed on removing the scratches from the coarser paper. After 180 grit, I go to 240, then 320 and then 400. I wet down a couple more times during the process to make sure I'm getting out all the scratches and marks (**photo 7**).

Applying a finish

Huon pine requires extra care when finishing. The Huon wombat should be looking quite burnished by now with no apparent scratches, dimples or stains. If this is the papery light Huon pine, I'd sand to 600grit to close off the fibres even more and create a very smooth surface – it can bruise very easily so care must be taken to handle it carefully. For the dense oily pieces 400 grit is fine enough, this type of Huon pine is tougher and more resilient.

When I work with this timber, I'm very conscious of washing my hands often and keeping all the surfaces around clean. One of the uniquely beautiful features of Huon is its pristine luminescence, when unfinished it has a bone-like quality and is crisp and clean.

My next step is to burnish the Huon pine wombat by rubbing it vigorously with brown packing paper or a straw burnisher, it scratches easily so you must be careful. The friction created will pull the oil to the surface and create a surface glow, sealing off the fibres.

I don't want this little wombat to be too glossy. I'd like a warm glow, enough highlight to deepen the features but not a shine that can look like it's just sitting on the surface.

After applying a light coat of shellac with a brush, sand it back once it's dry. It's important not to get any

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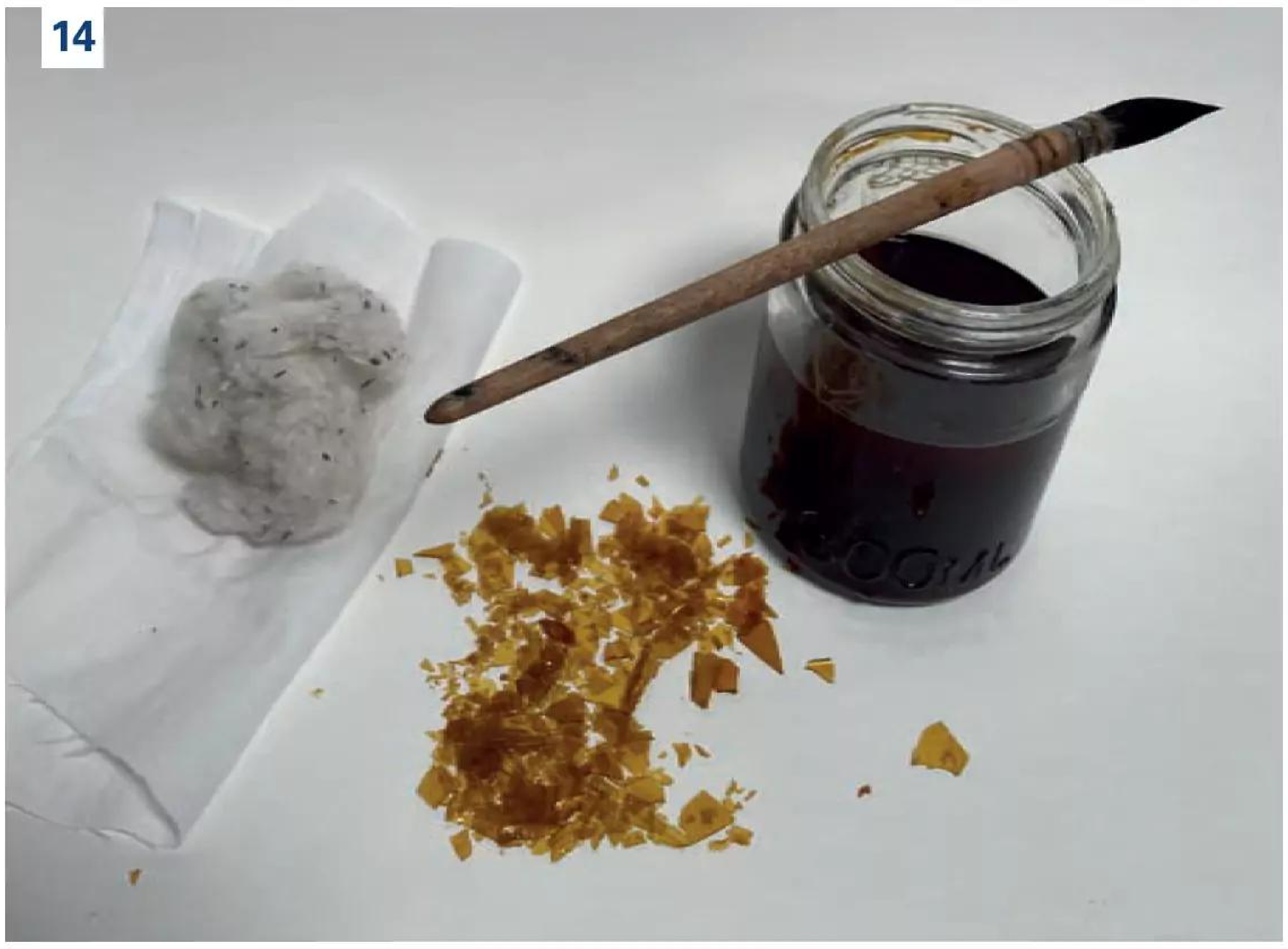

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shellac drips on raw timber as these can leave shadows under the finish. Once dry, I sand back with 600 grit sandpaper and recoat (**photo 8**). I usually coat Huon pine twice and then rub back, if it's a more open-grained piece, I'd do a third coat. There always an element of judgement with every piece.

The Tasmanian blackwood and white beech used for these wombats is considerably more open grained than the Huon pine. I would still burnish them both to close off the fibres before applying the first coat, but I would give three brush coats of shellac sanded between with 600 grit paper. Filling up the grain is important, but too much shellac on the surface may give a candy apple look.

The beefwood is extremely dense, burnishing with brown paper helps seal and even the fibres (**photo 9**). The actual rays are denser that the fibres in between. I think two coats of brushed shellac is enough as the quartersawn rays really dominate (**photos 10, 11**). This wood has a relatively low rate of sinkage, meaning the finish doesn't absorb into the grain and dull off like it does in the more open grain timbers.

At this point, the little wombats have had their coats of shellac. That's two coats for the Huon pine wombats and beefwood wombats, and three coats for the white beech and blackwood wombats due to the openness of the grain and the propensity for finishes to 'sink' (**photo 12, 13**).

From here I either want to wax and buff the finish to reduce the surface shine and create depth and softness. This is my approach to the beefwood and the Huon pine and denser timbers in general.

Alternatively, I can pull up the shine, adding depth and a glow to the overall finish with a shellac rubber or pad with a small amount of flaxseed oil on the bottom to stop the pad from sticking. This is the approach to more open grain timbers like blackwood and white beech.

I clean all the wombats with a soft cotton cloth. For the Huon and beefwood wombats, I apply the wax with the 600 grit sandpaper and buff it off with a cotton cloth. The sandpaper cuts

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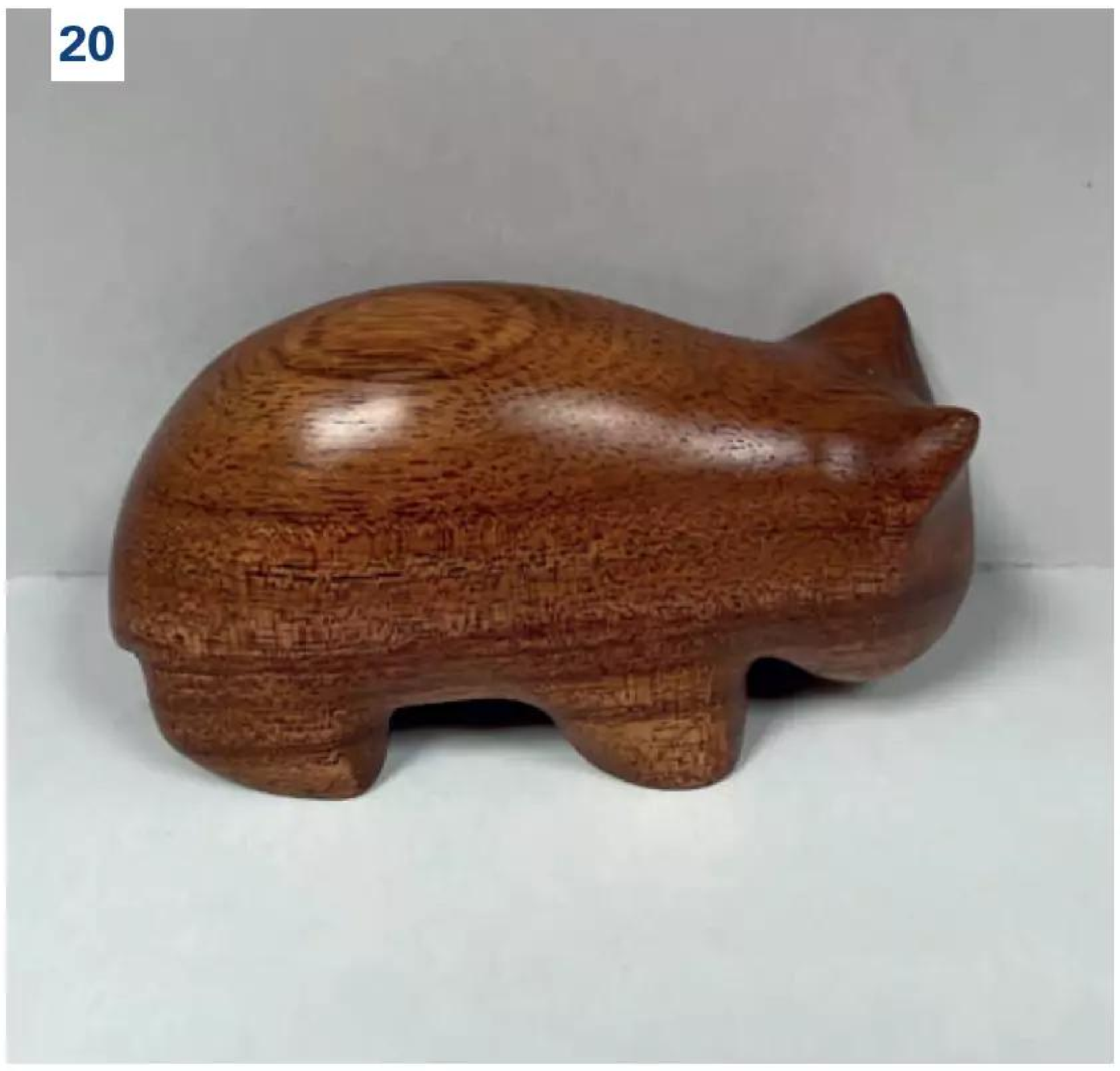

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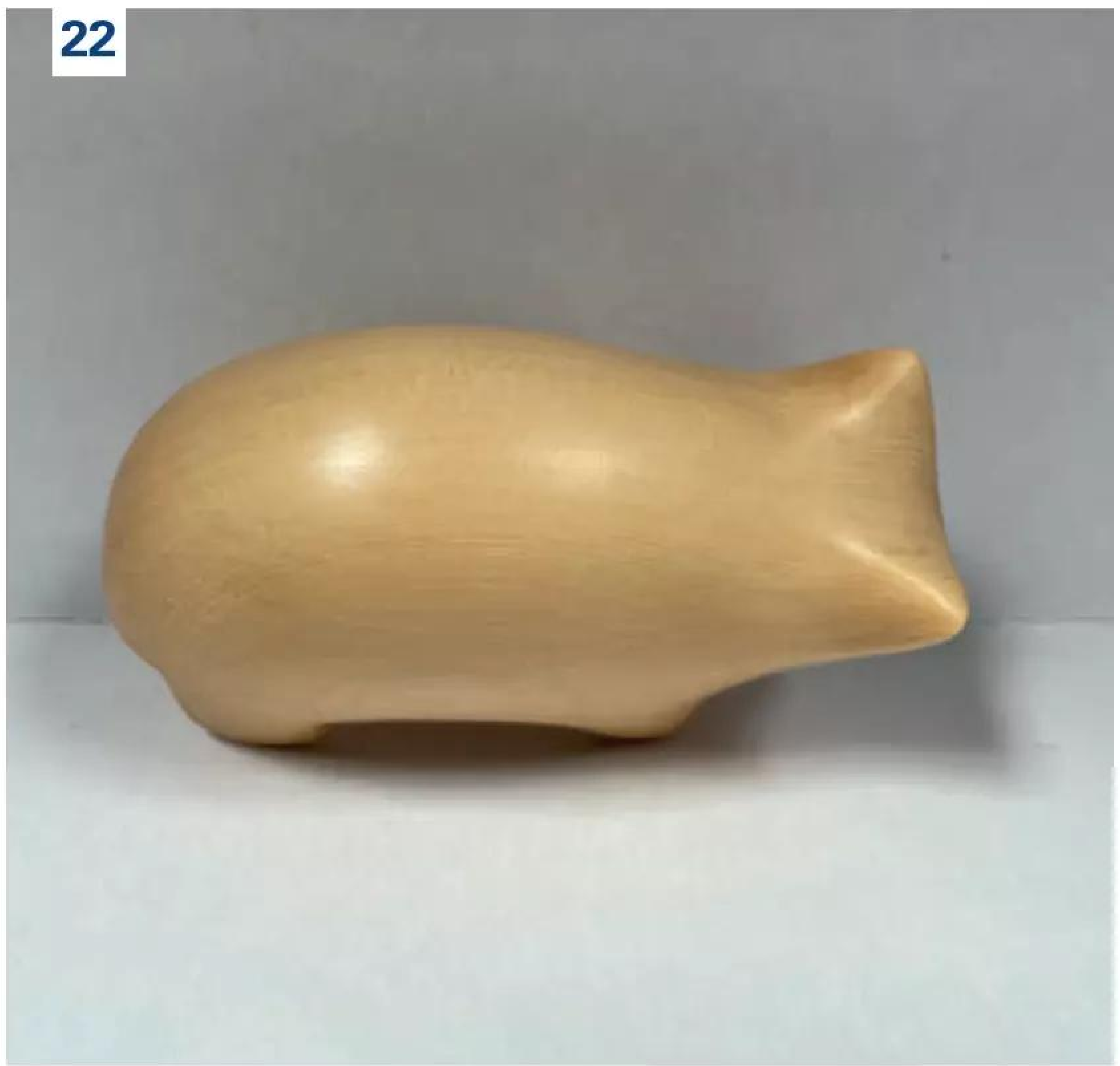

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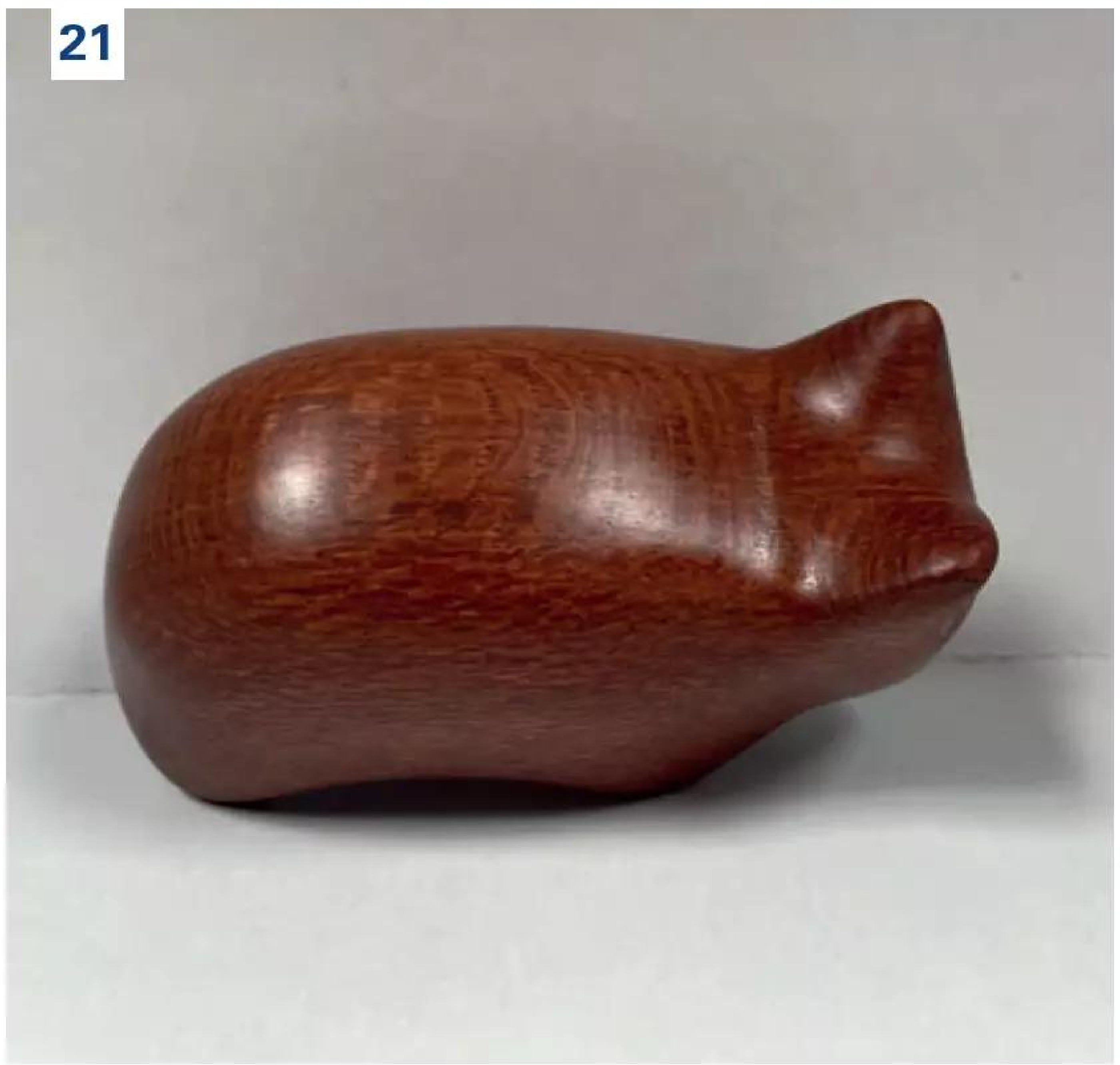

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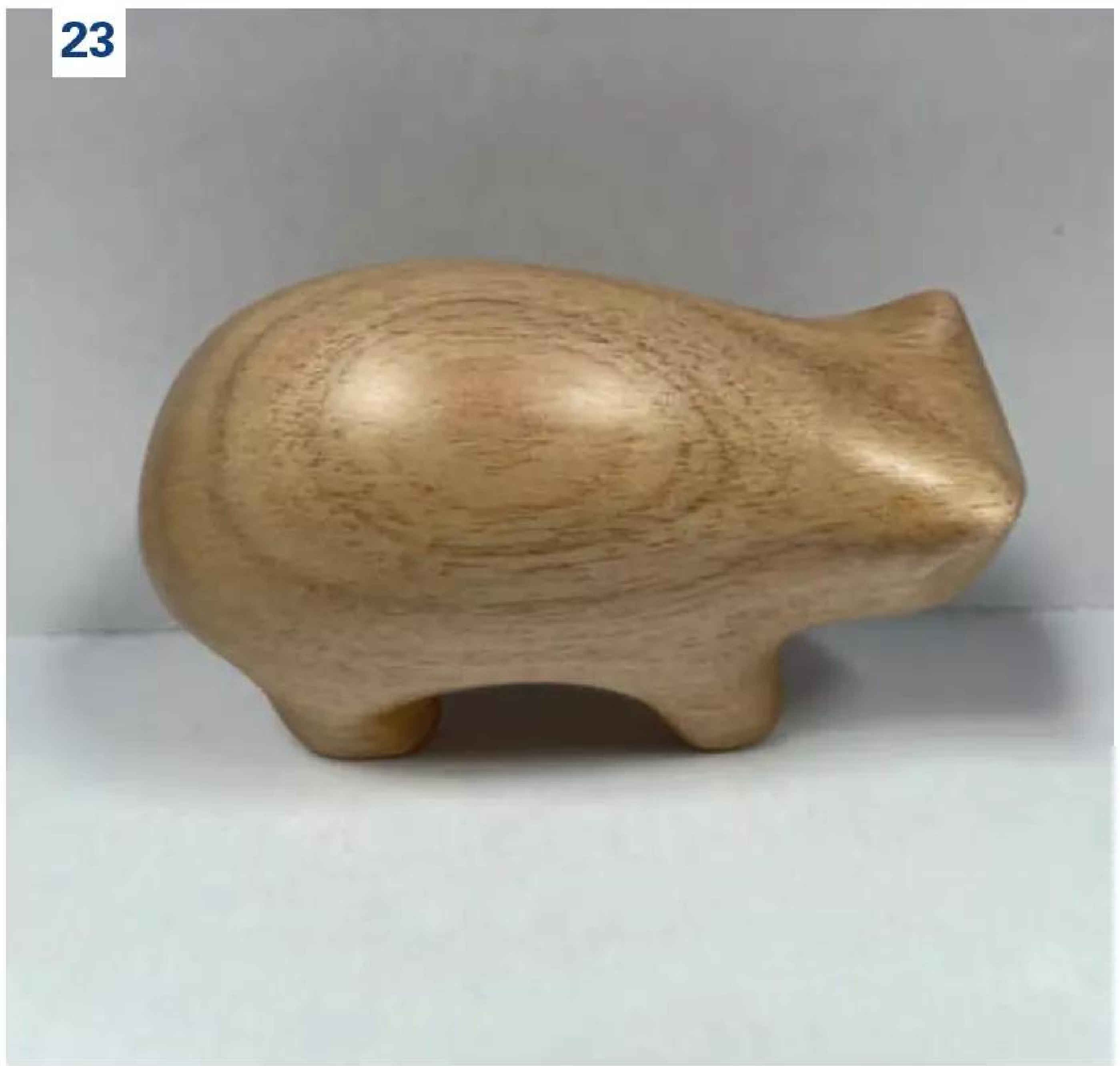


through any rough sections and deepens the glow. It should feel beautifully smooth and if your preparation has been thorough, and there will be no marks or scratches under the finish. You can rewax in a day or so. I always like to finish over a couple days at least allowing all the materials to settle.

To make a pad, I use a piece of clean cotton cloth with some cotton wadding in the centre, I add some shellac to the wadding and wrap the cloth around it. **Photos 14–18** show how to make a shellac rubber.

Tamp off any excess onto some paper towel and the use a semi dry pad to burnish the surface. A few drops of the flaxseed oil will lubricate the pad and reduce any drag. The friction will pull up the surface a create a lovely glow, highlighting the curves and the grain (**photo 19**).

I like to leave this surface for a couple of days until all the alcohol has completely evaporated and the finish has settled. A final buff up with some wax will finish it off beautifully (**photos 20–23**).

Like so many things, it's trial and error. Experiment and make small changes to your techniques but keep your ingredients simple and build skill and awareness. I absolutely love finishing – it's the time that you get to really showcase what a beautiful material wood can be. It's all about enhancing the features that are naturally there.

14. For the shellac rubber you'll need cloth, wadding, shellac flakes (raw and mixed with methylated spirits – I use 250 grams of shellac per litre.

15–17. Making the shellac rubber.

18. Using the rubber.

19. A few drops of the flaxseed oil will lubricate the pad and reduce any drag.

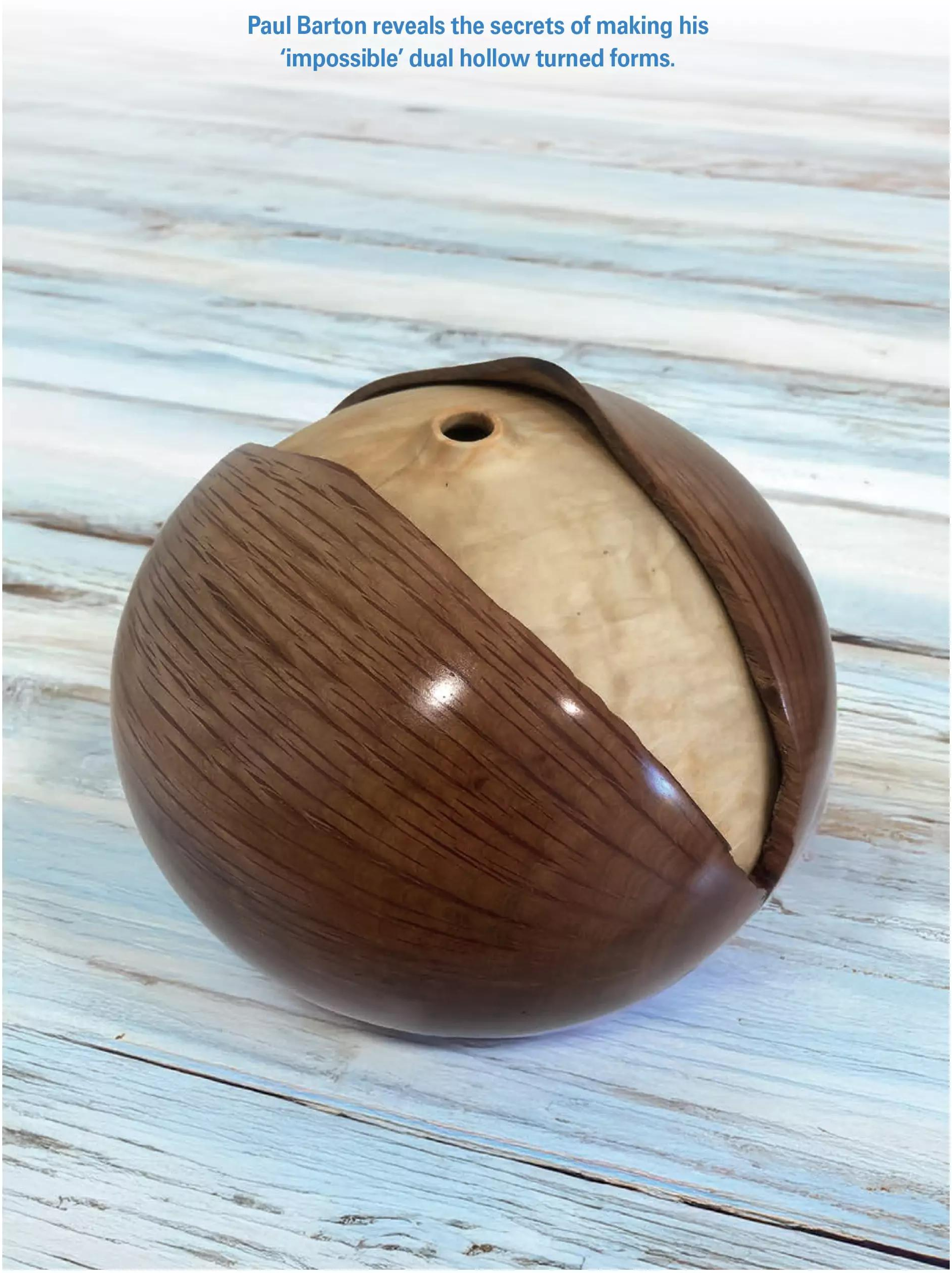
20–23. The processes differed to get a uniform soft glow on each of the species used.

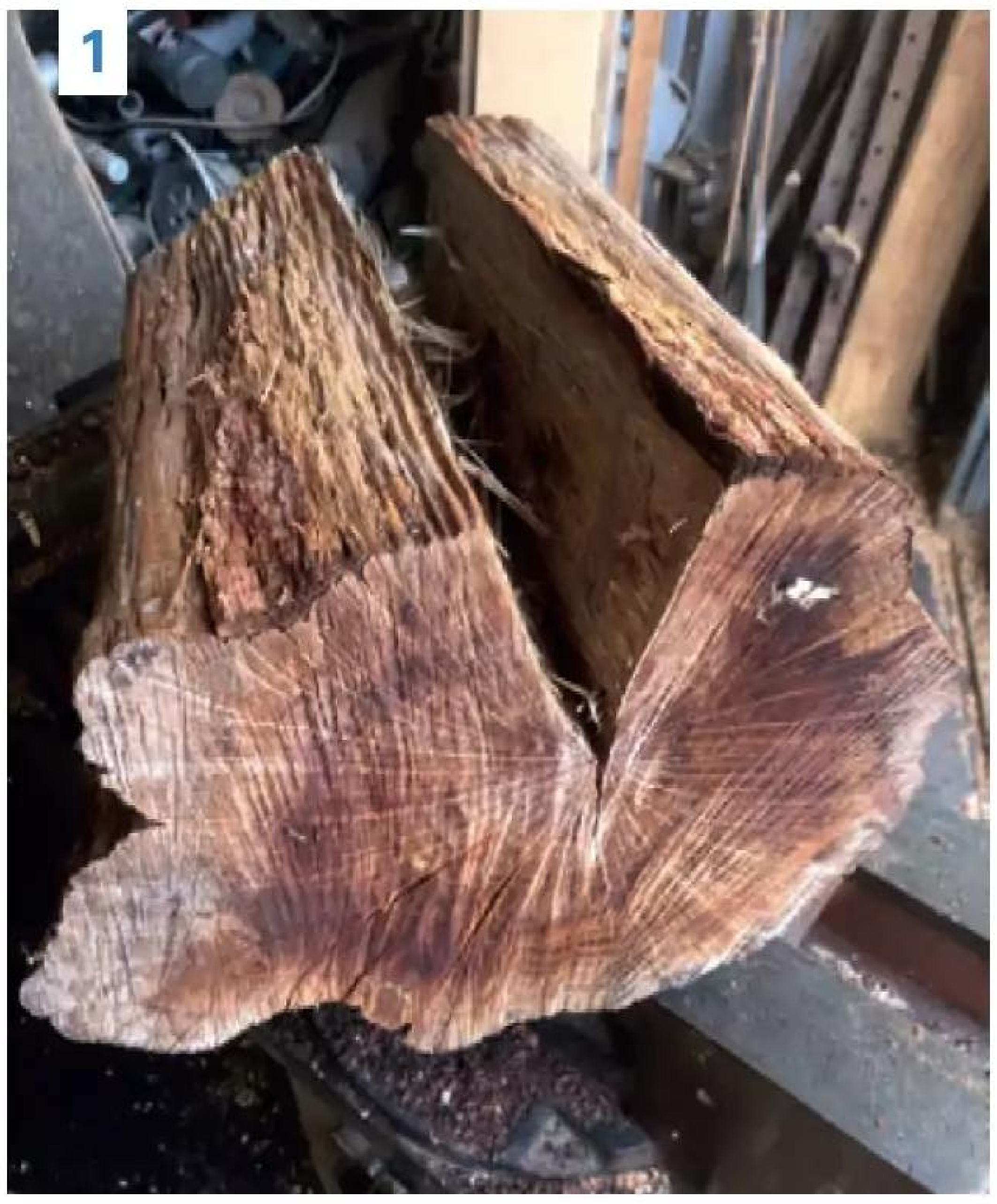
Photos: Carol Russell

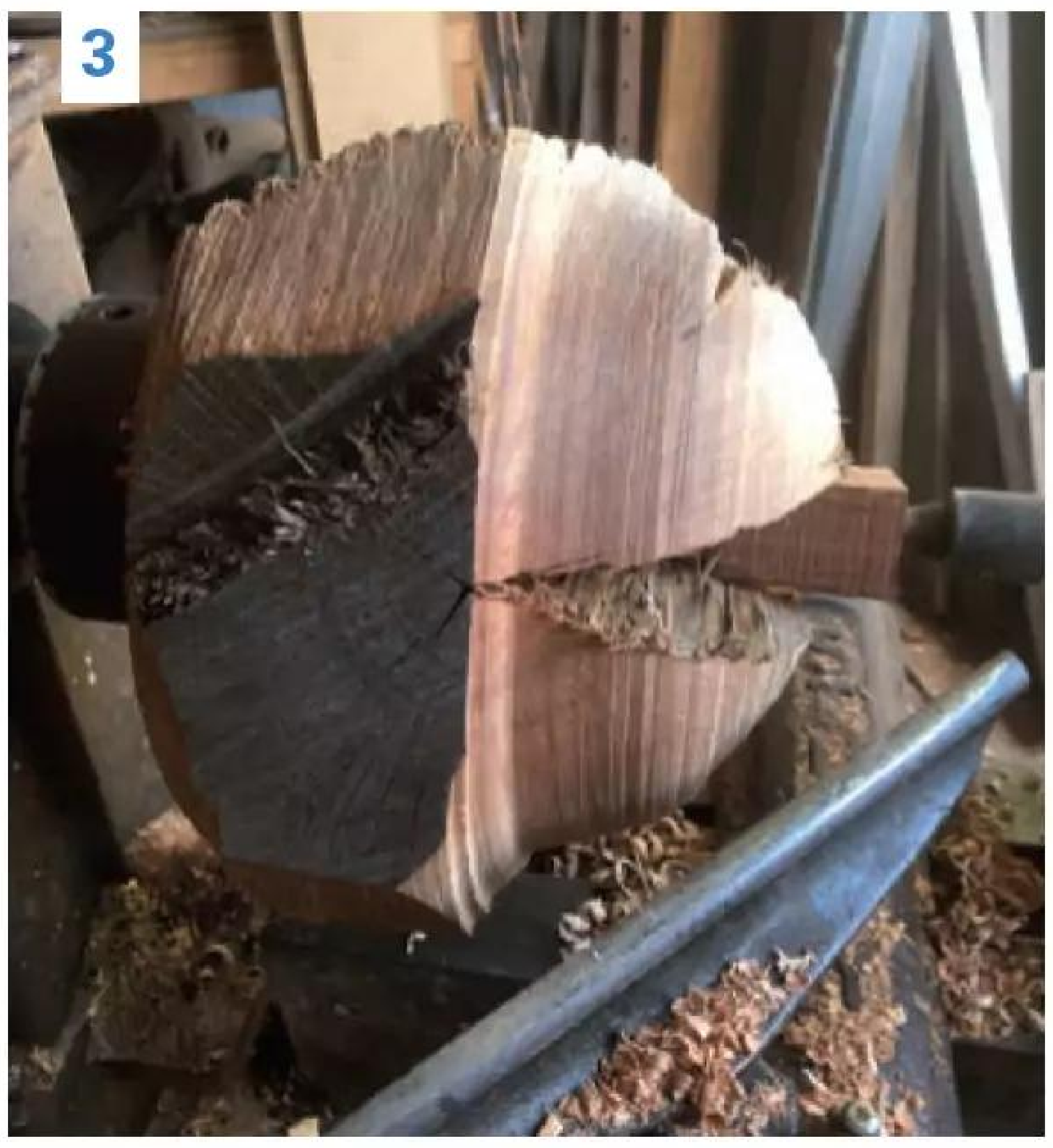
Carol Russell @carol.a.russell is a woodcarver currently living and teaching in Melbourne. She is a regular contributor to Australian Wood Review magazine. Learn more at www.carolrussellwoodwork.com.au

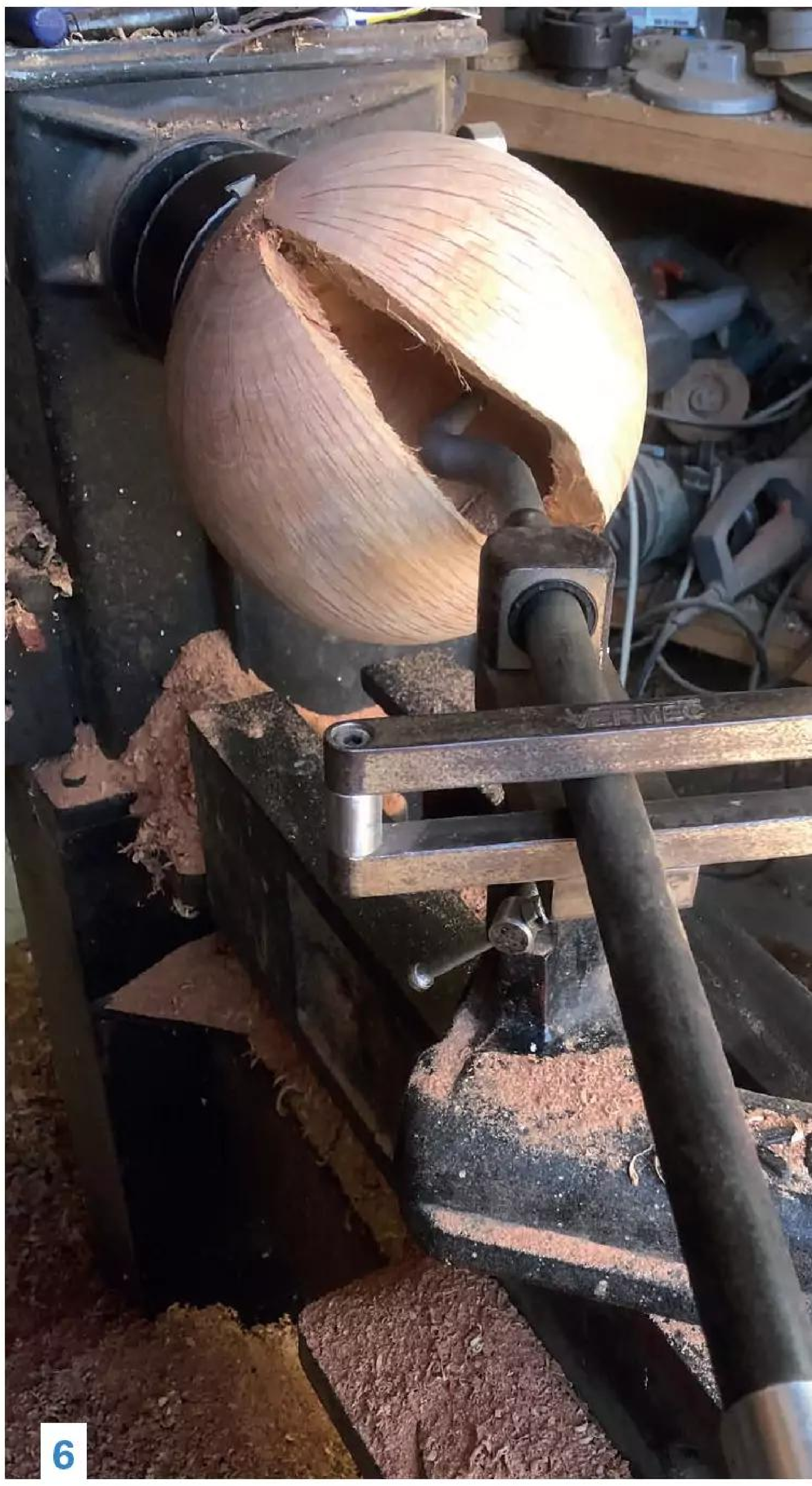
Vessel in a Vessel

Paul Barton reveals the secrets of making his 'impossible' dual hollow turned forms.









Firstly, a little bit about myself. I have been turning wood off and on now for over 20 years. I am drawn to the hollow vessel, its form and its simplicity. I specialise in thin-walled vessels that highlight the beautiful imperfections within natural timber.

Trees are special, they mean a lot to me. I feel honoured to be able to work with a material that is beautiful when it is living and is equally beautiful when its life has ended.

I turned my first piece of wood in a year 8 woodwork class. It was a rolling pin and my mum still has it to this day. Turning is something I have to do. I feel that I can truly express myself through the wood and what I create.

In this article I will attempt to describe the processes that go into the creation of my vessel within a vessel piece. I stumbled across this idea several years ago, but it hasn't been until recently that I have tried to really explore the idea and see how far I can go with it.

From firewood

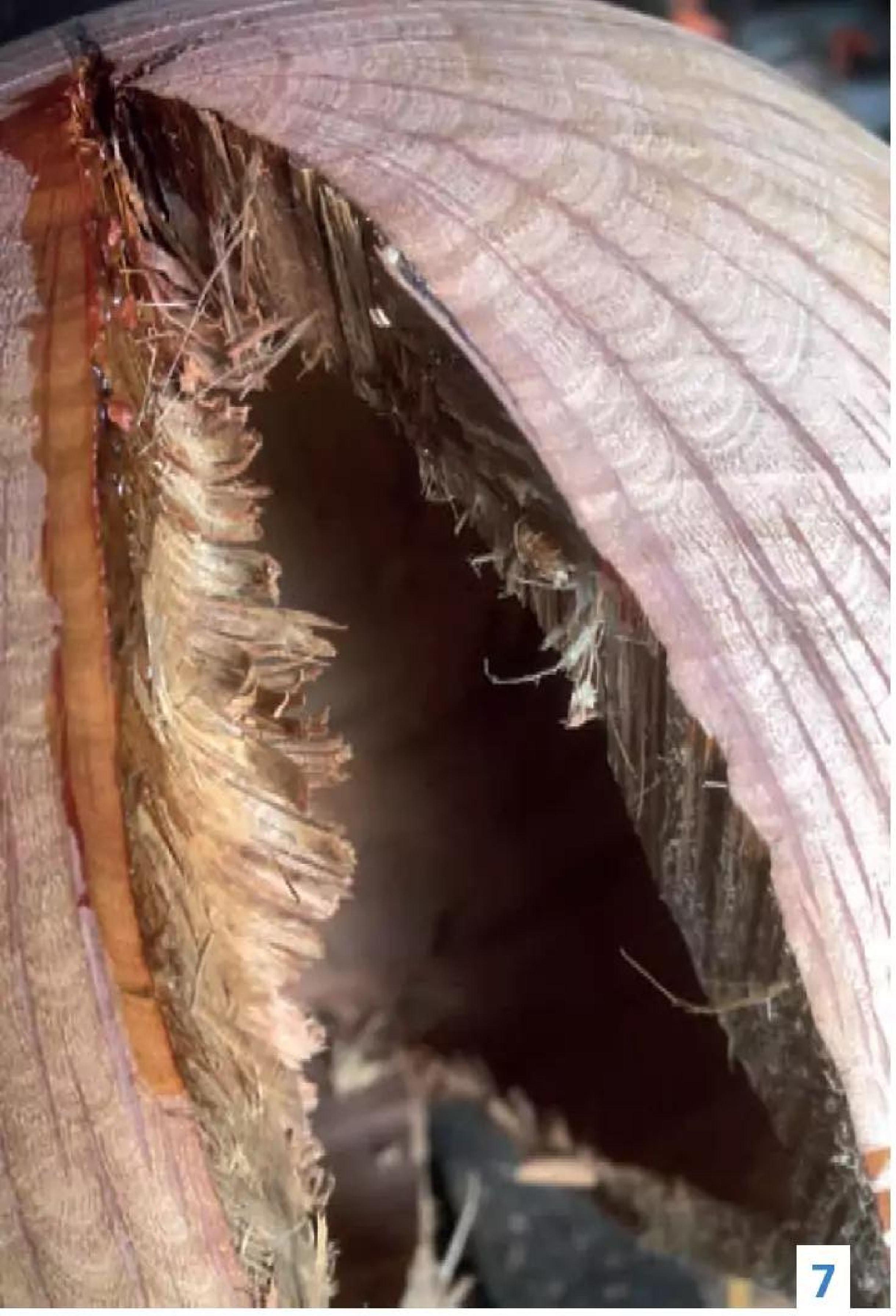
Firstly, sourcing the timber is one of the most important steps. The piece I have chosen for this project was salvaged from a friend's firewood pile. It is a dry piece of sheoak (**photo 1**). The timber needs to be dry so the vessel is stable once it is turned. From the photos you can see the large crack running through the log. By hollowing through the crack, the vessel will have an opening longer than it is wide which is perfect for this project. I am constantly on the lookout for logs that have natural defects which allow me to hollow through.

Hollowing, first stage

The hollowing process is the same for all my vessels. After mounting

Main: Paul Barton's *Vessel in a Vessel* made from sheoak and box elder.

1. From the firewood pile. Hollowing through the crack will give an opening longer than its width, perfect for this project.
2. Mounted on the lathe, roughing the form out can start.
3. A piece of wood wedged in the crack becomes a mounting point.
4. Refining the exterior shape.
5. The form is ready for hollowing.
6. Using Vermec's deep hollowing tool for the interior.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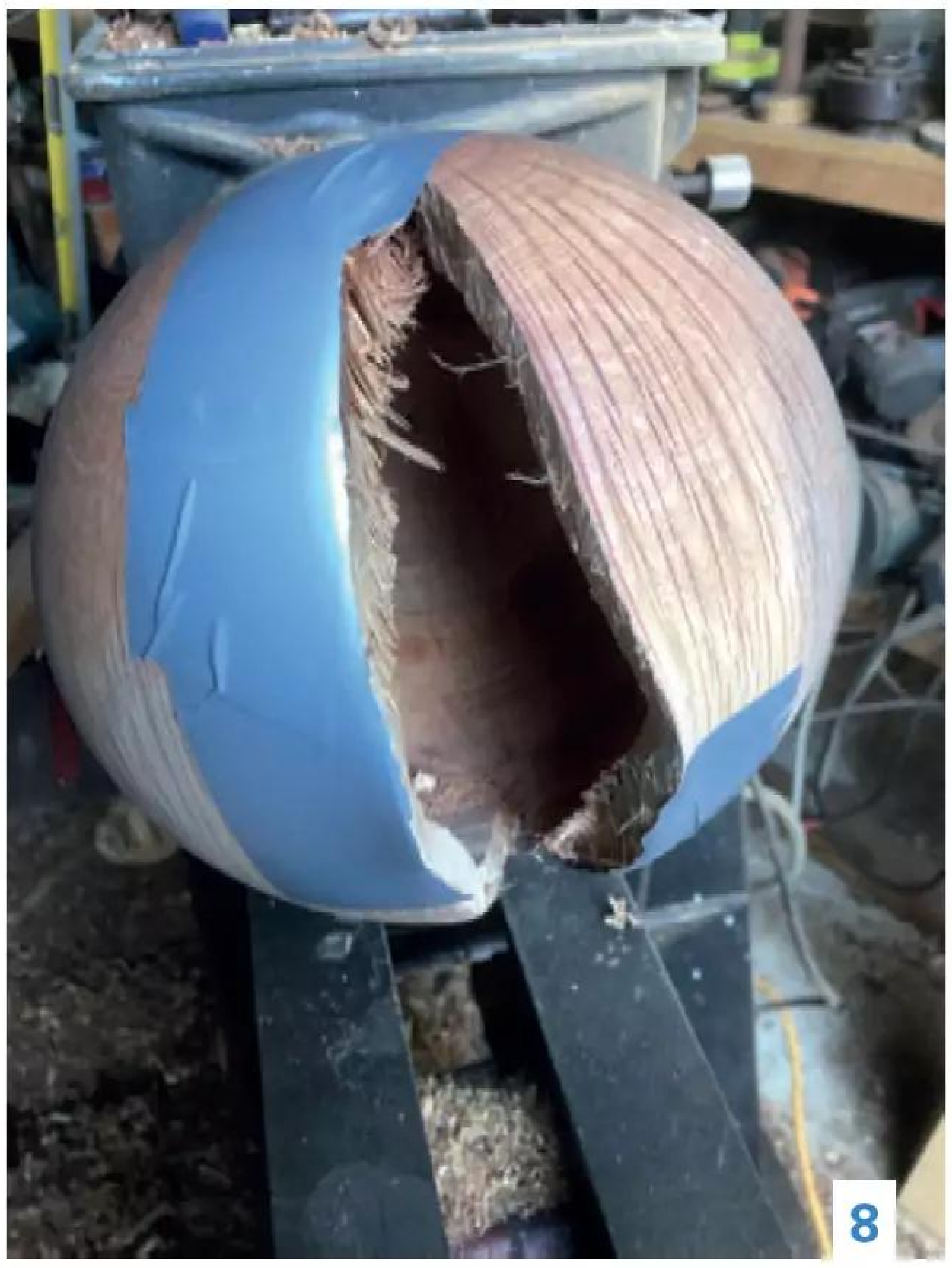
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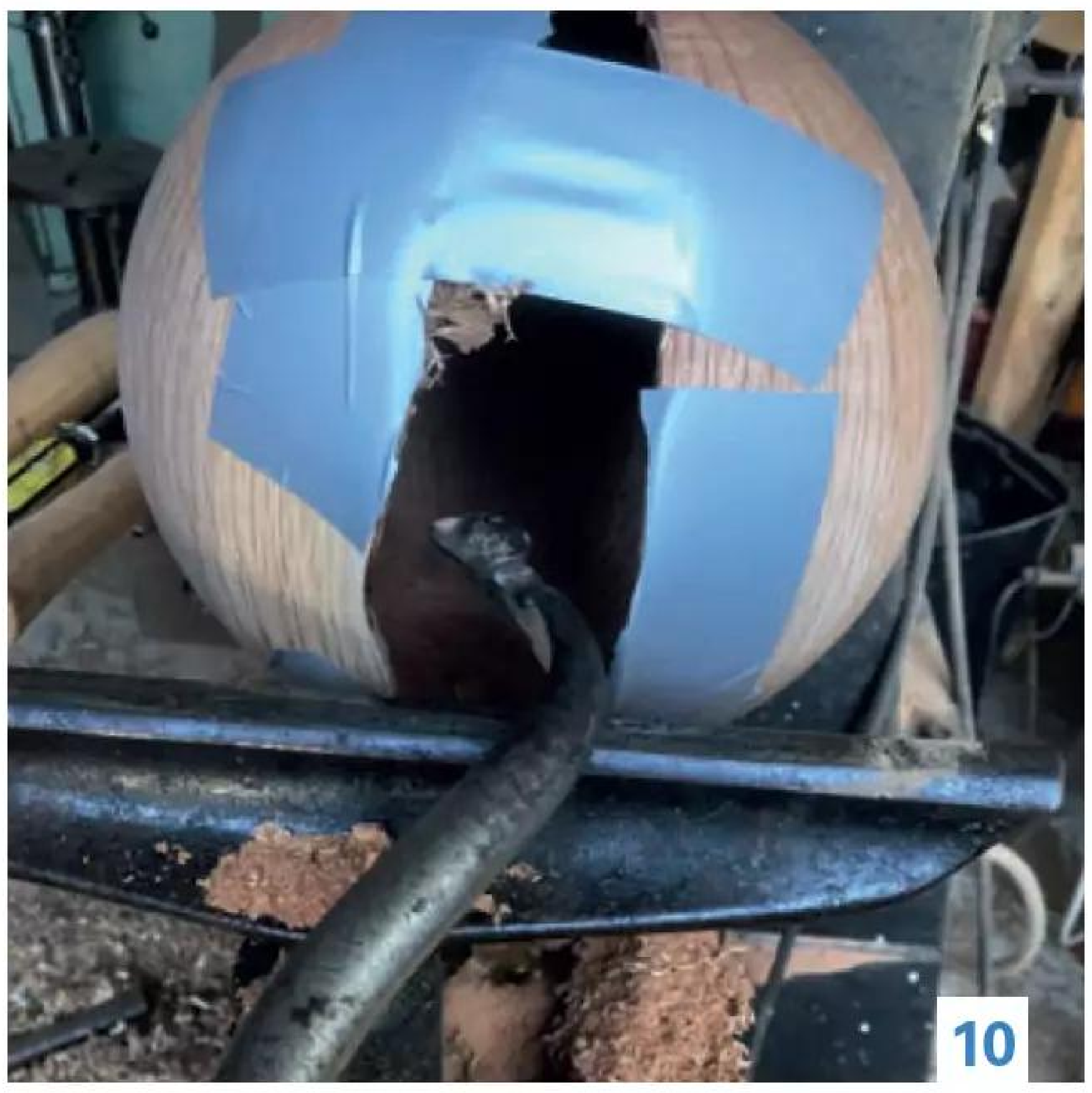
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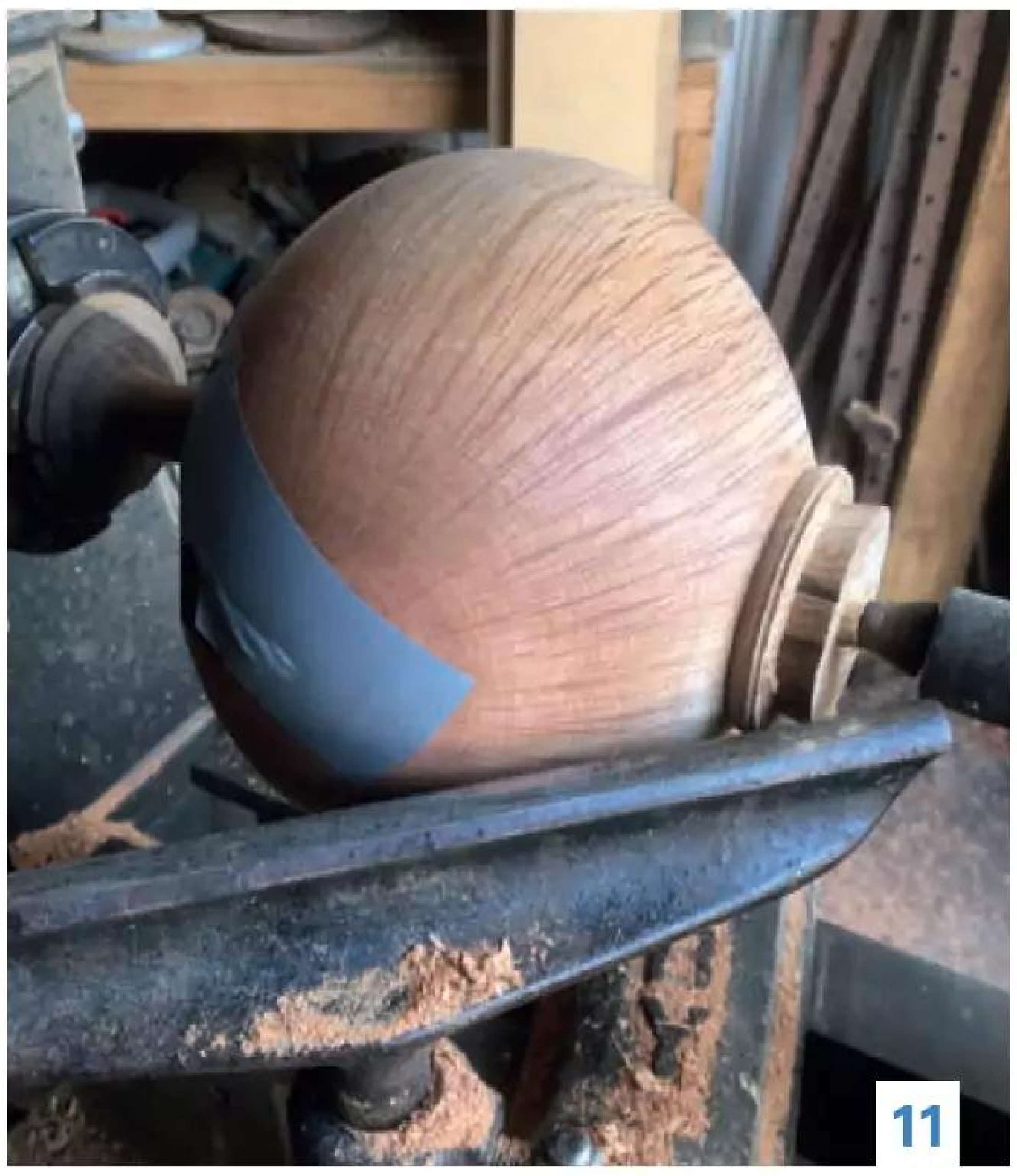
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7. The sheoak grain tended to feather on the trailing edge.

8. Duct tape helps to support the piece and the natural edge while turning.

9. You can add more tape if needed as the walls are thinned.

10. After the initial hollowing, I switch to the Sorby RS system with the arm brace.

11. Once the vessel is turned it is reversed and held between centres. The spigot can now be removed and now the exterior finished.

12. Sanding the finished outer form.

and initial roughing (**photos 2, 3**), I turn the log to the desired form using standard bowl gauges (**photo 4**). I then turn a spigot at the base to reverse the bowl so the hollowing can be done. I initially hollow my vessels to about a 25mm wall thickness (**photo 5**).

For this I use the Vermec deep hollowing tool (**photo 6**). I find it easy to use and it removes material relatively quickly. Once the initial hollowing is done, I then head back and re-turn the exterior. This removes any wobble which may have been caused through the first hollowing stage. It is also the time that I refine the vessel's form to get it just right.

Photo 7 shows how this piece of sheoak had a really bad tendency to feather the grain on the trailing edge of the rim however this was removed later.

Hollowing, second stage

The exterior is then sanded. Once this is done, I start the second stage of the hollowing. For this I use the Robert Sorby RS system with the arm brace. This allows me to take fine scaping cuts and also leaves a clean finish.

The piece is then hollowed to a wall thickness of approximately 2–3mm thick. This is done in stages starting at the top and gradually working towards the bottom. The wall thickness is important – it needs to be thin to reduce the variation between the inner and outer shape. The thicker the wall, the more variation and this will cause problems later on.

Just a quick note. I use duct tape to hold my vessels together and to also help maintain the integrity of the natural edge (**photos 8, 9, 10**).

The trick to turning my thin pieces is not to worry about breaking the piece. I break them quite often, because you're on the limits. If you don't worry, and then don't break it, it's a bonus!

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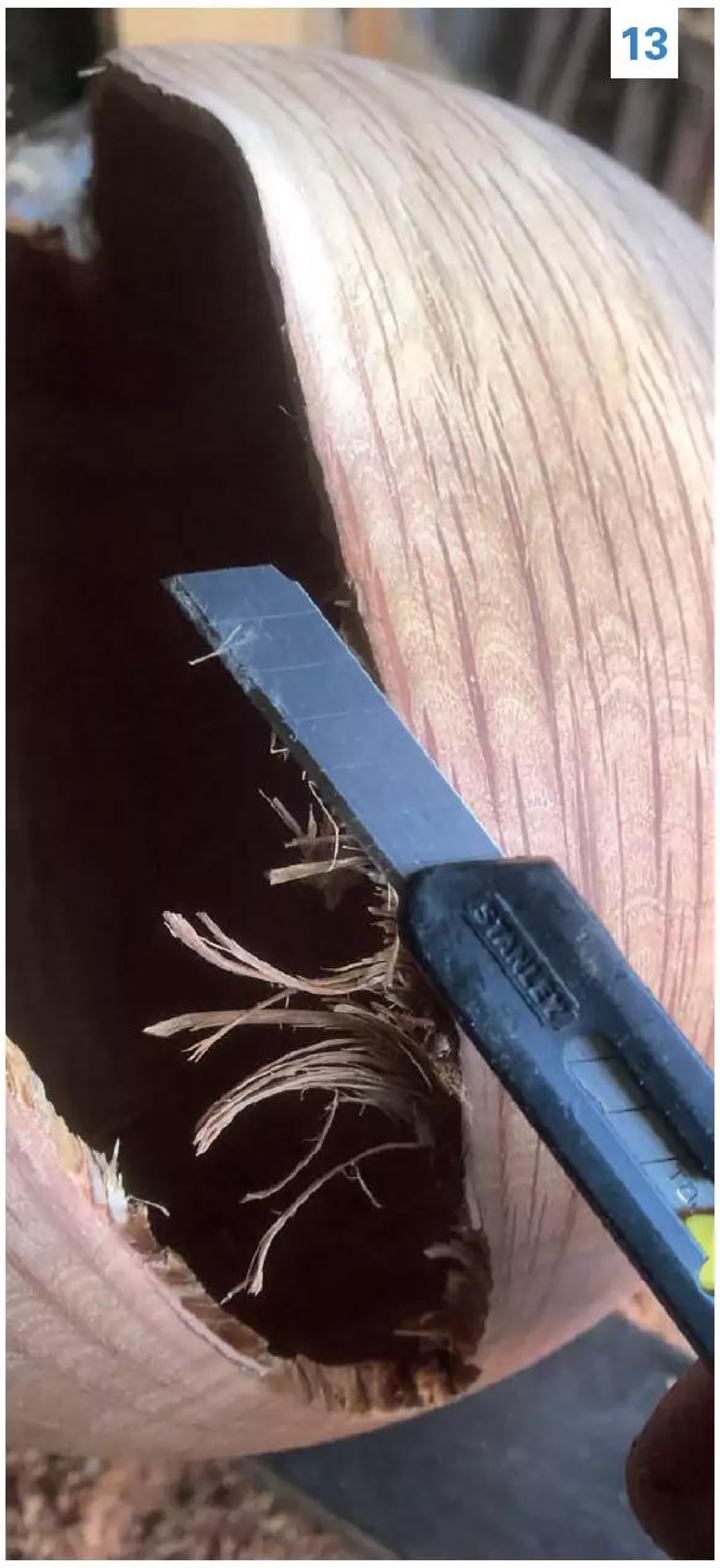

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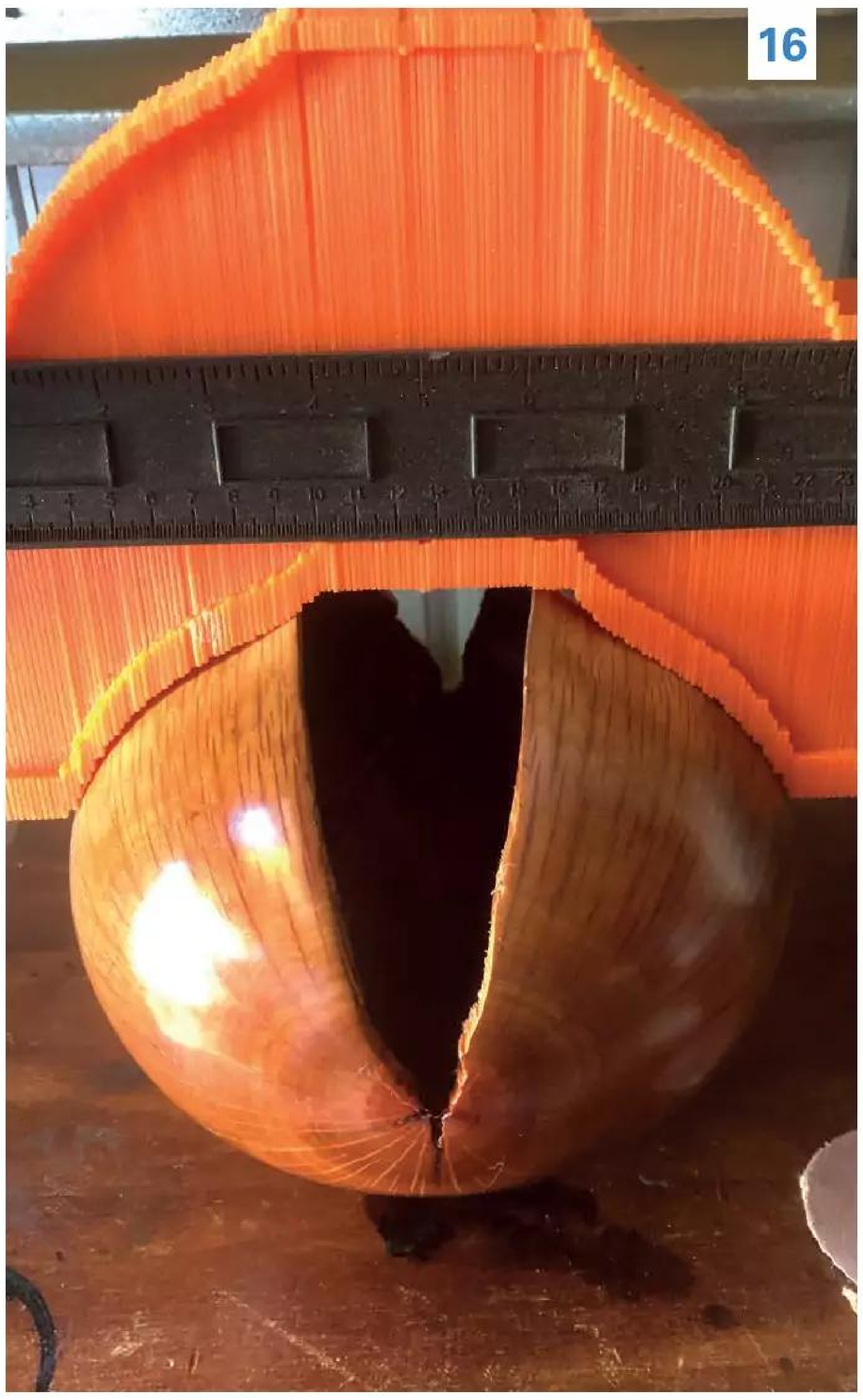

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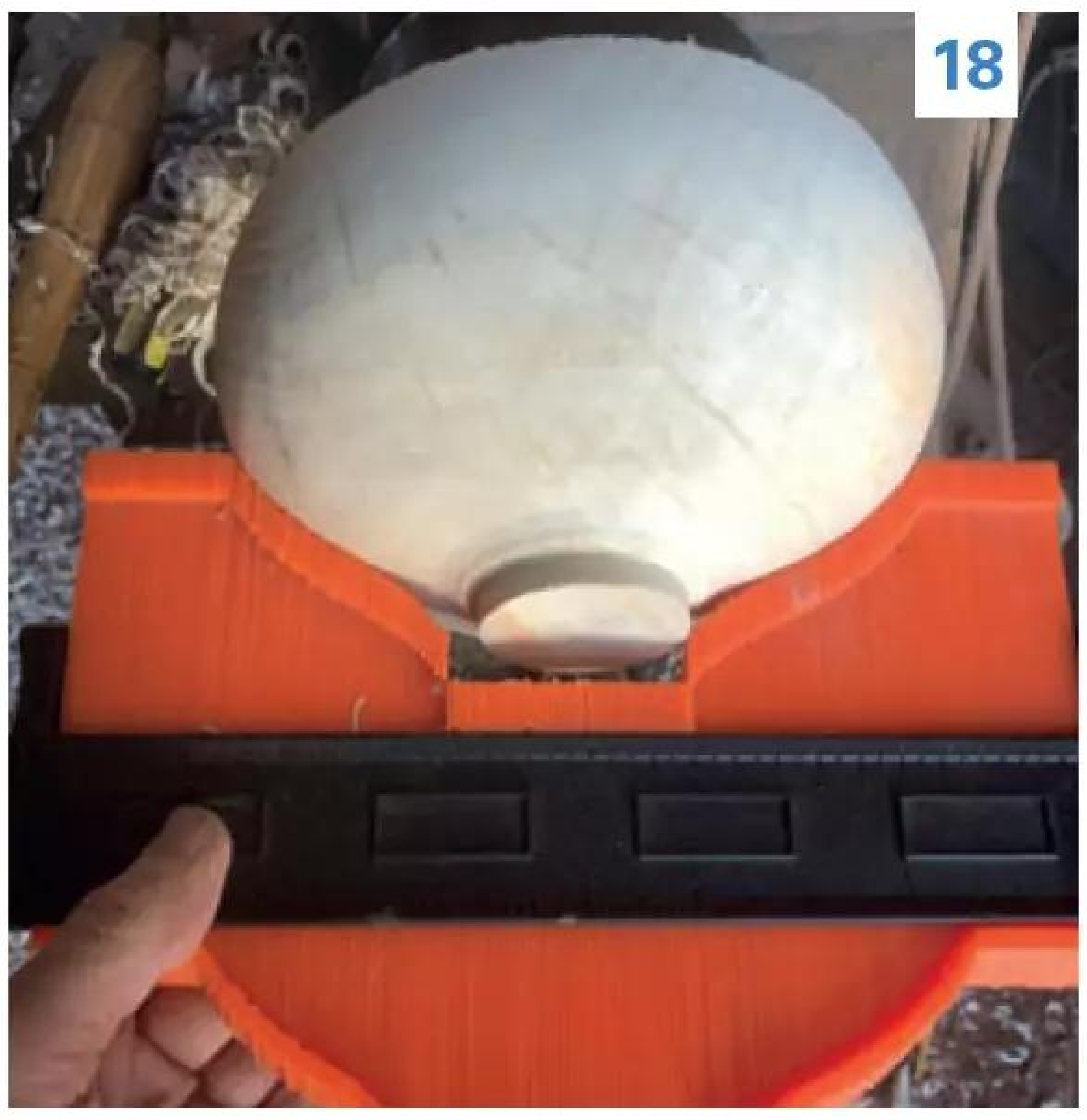


13. Trimming the feathered grain on the edge with a Stanley knife.

14, 15. A piece of box elder was mounted on the lathe to start on the inner form.

16. A profile gauge is used to match sheoak form.

17, 18. Use the gauge to measure and check your progress.

Once the vessel is turned it is reversed with the use of a dolly and held between centres (**photo 11**). The spigot can then be removed and now the outer vessel is finished (**photo 12**). It was also time to clean up the feathered edge of the rim with a Stanley knife, (**photo 13**).

The vessel within

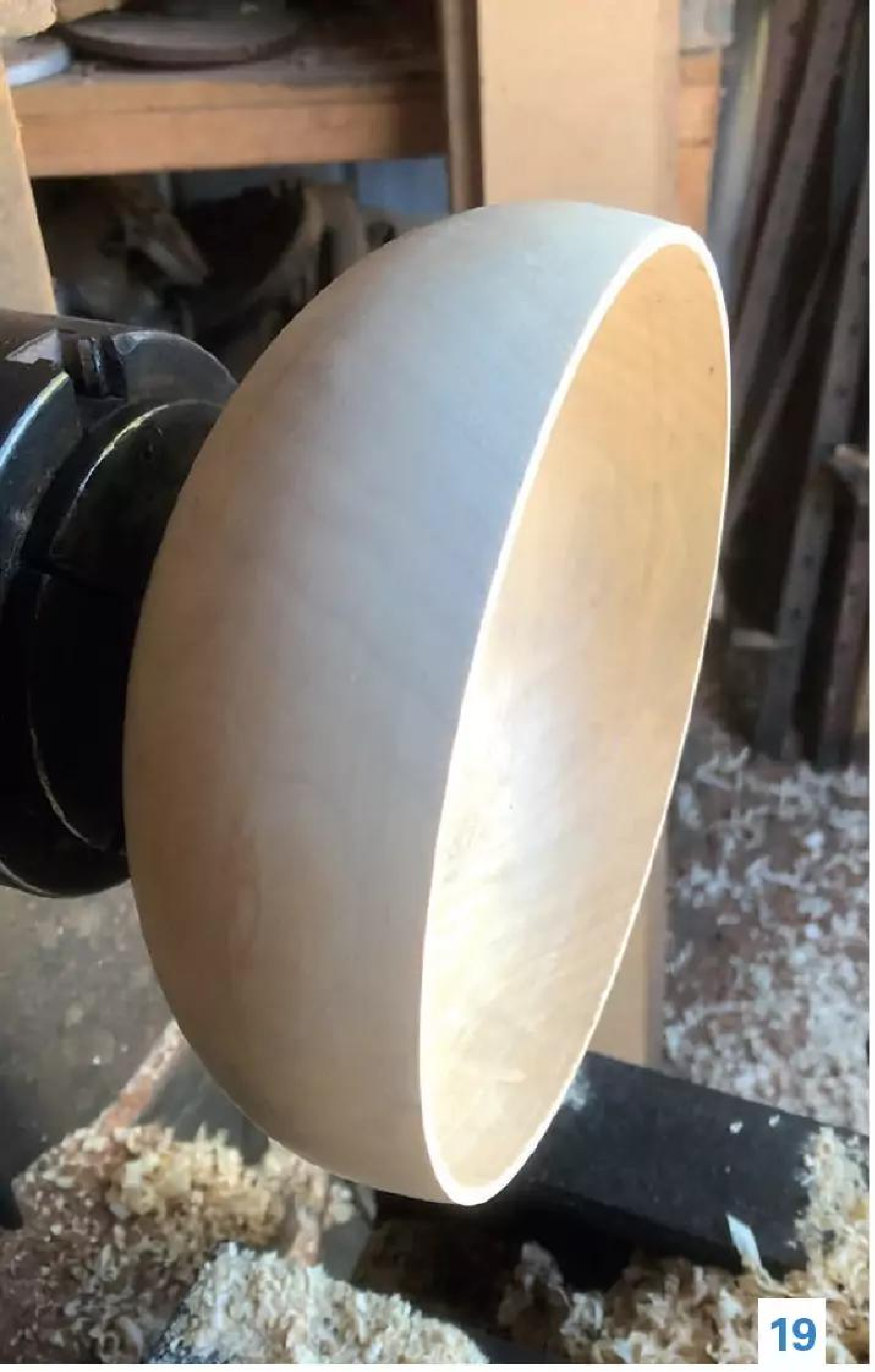
The next stage is to turn the inner vessel. The inner vessel is basically an open bowl turned upside down. I like to have a contrast between the timbers of the inner and outer vessels. I chose a piece of box elder for this and mounted it on the lathe (**photo 14, 15**).

The first thing is to get the profile of the main vessel. To do this I use a profile gauge and press it down to get the shape (**photo 16**). This is where the thickness of the original vessel is important. If it is too thick there will be too much variation between the outside and inside profile.

Once this is done it is just a matter of turning a basic open bowl where the outside profile of the bowl matches that of your profile gauge (**photos 17–18**).

The bowl is then hollowed with a standard bowl gauge to about 2–3mm wall thickness (**photo 19**). The same wall thickness will keep the finished piece nice and balanced.

The bowl is then reverse chucked using the jam fit technique (**photo 20**). Keep in mind when removing the spigot, the bottom of the bowl will become the top of the internal vessel so it needs to be shaped accordingly and a hole needs to be turned into the centre to create the vessel opening. This is one of the few times it is okay to turn through the bottom of your bowl (**photo 21**).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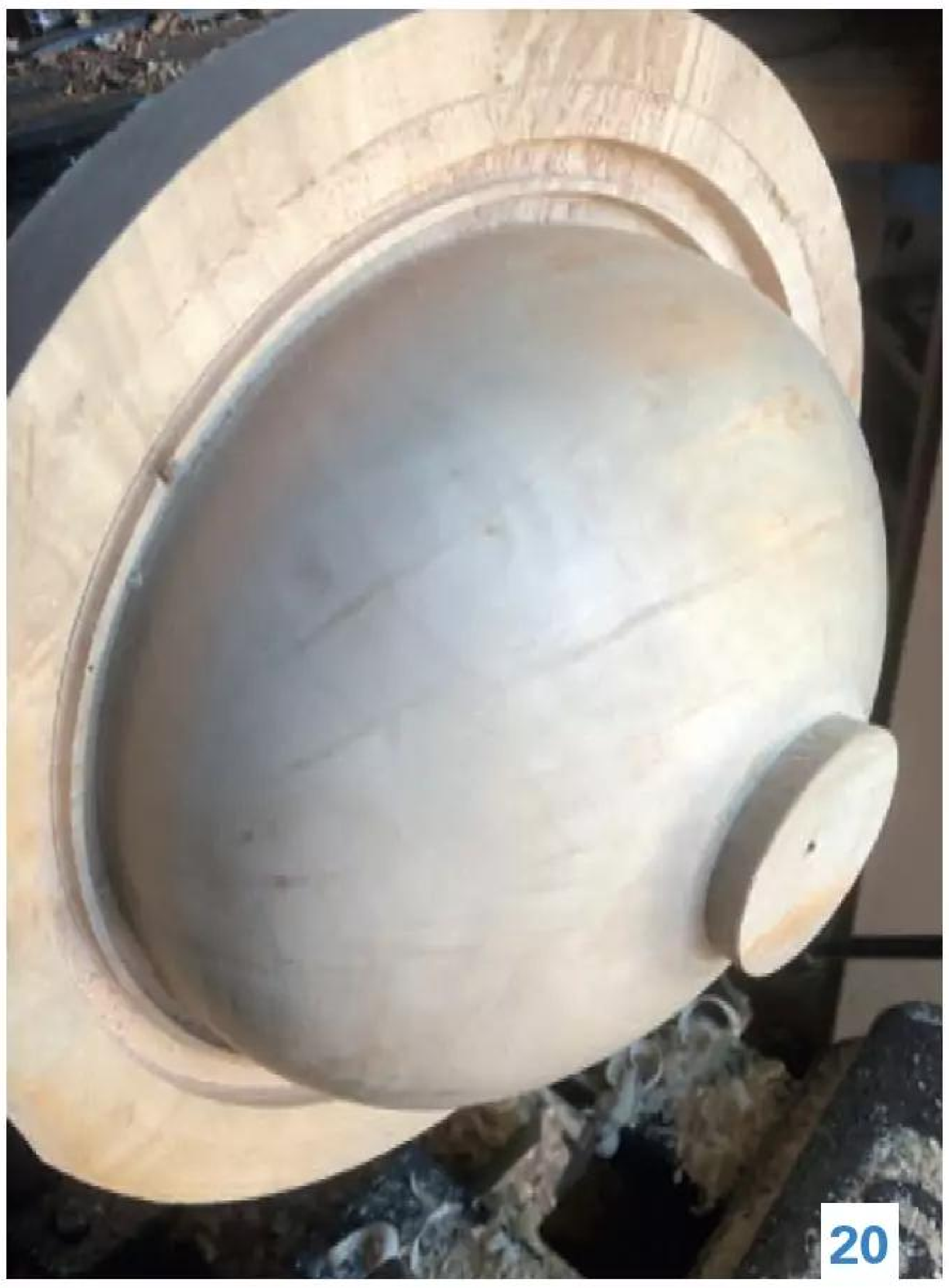
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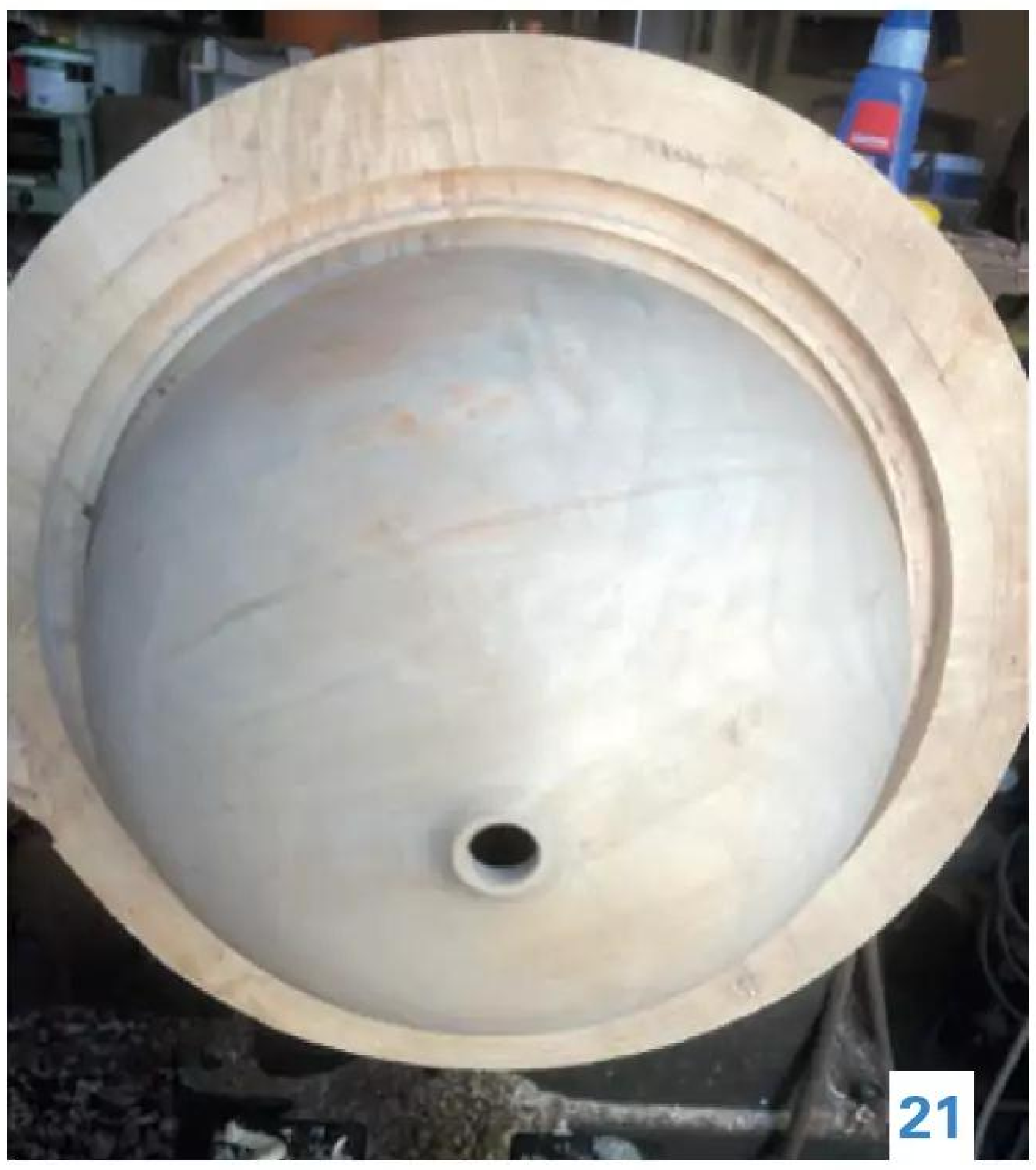
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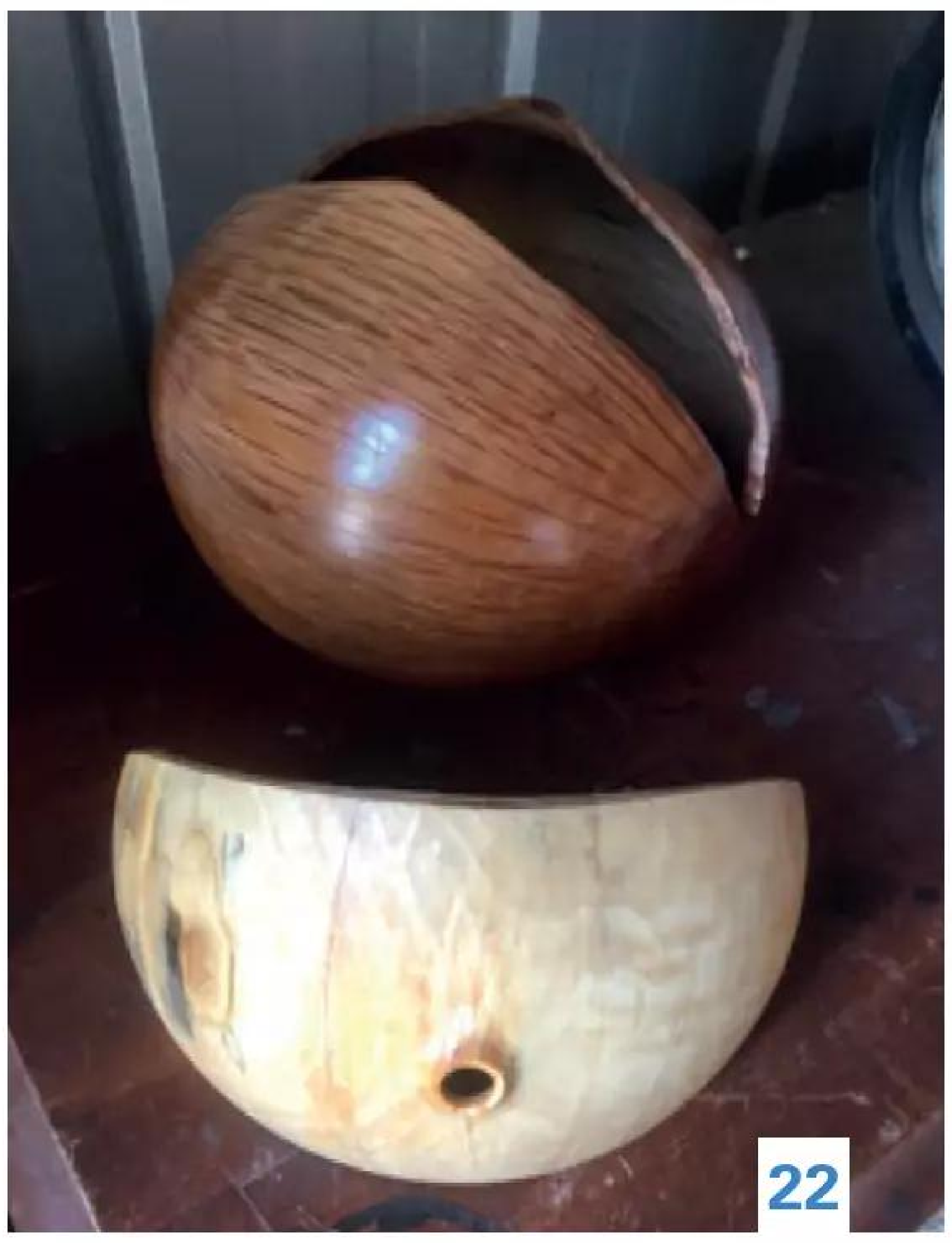
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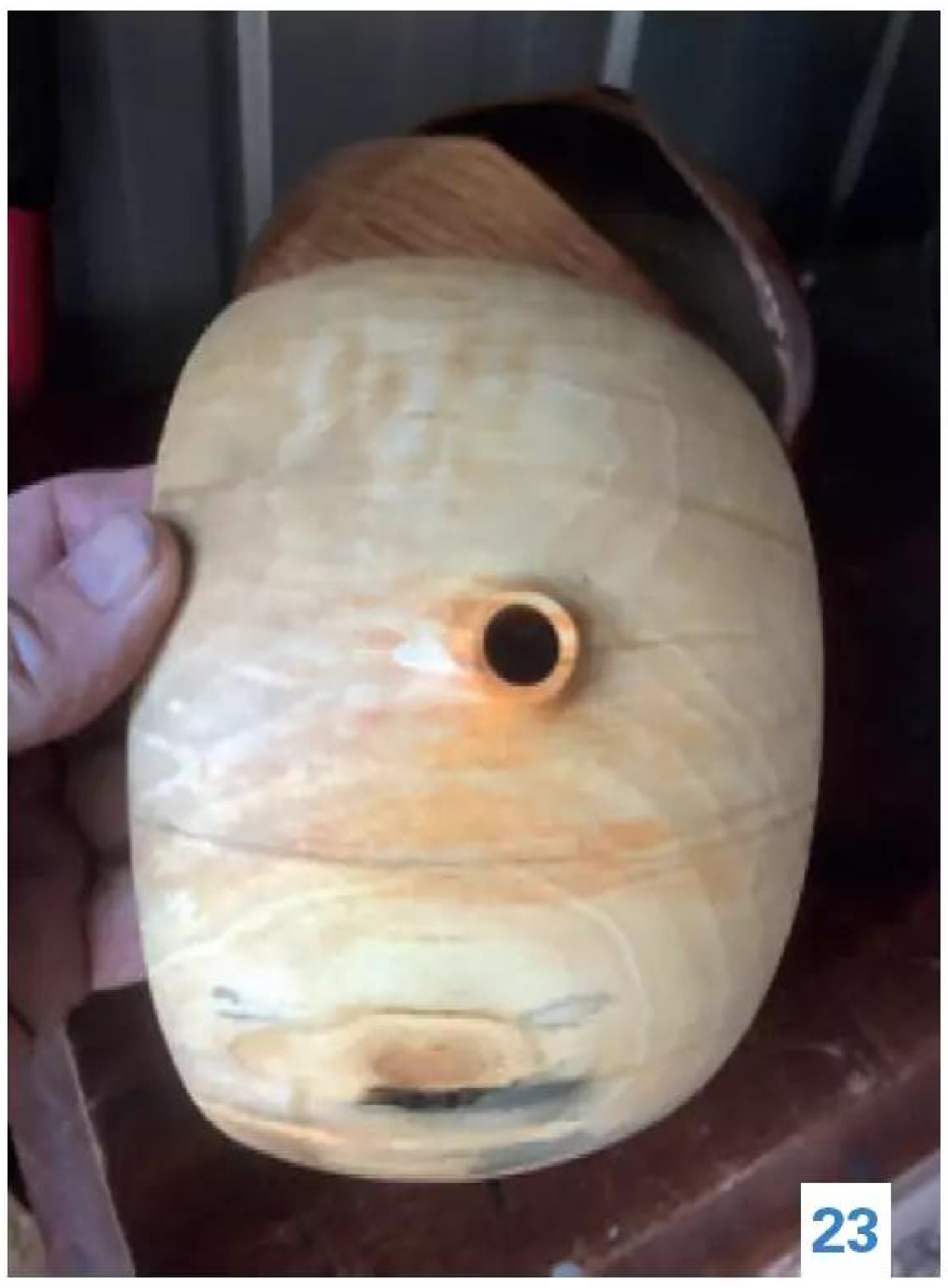
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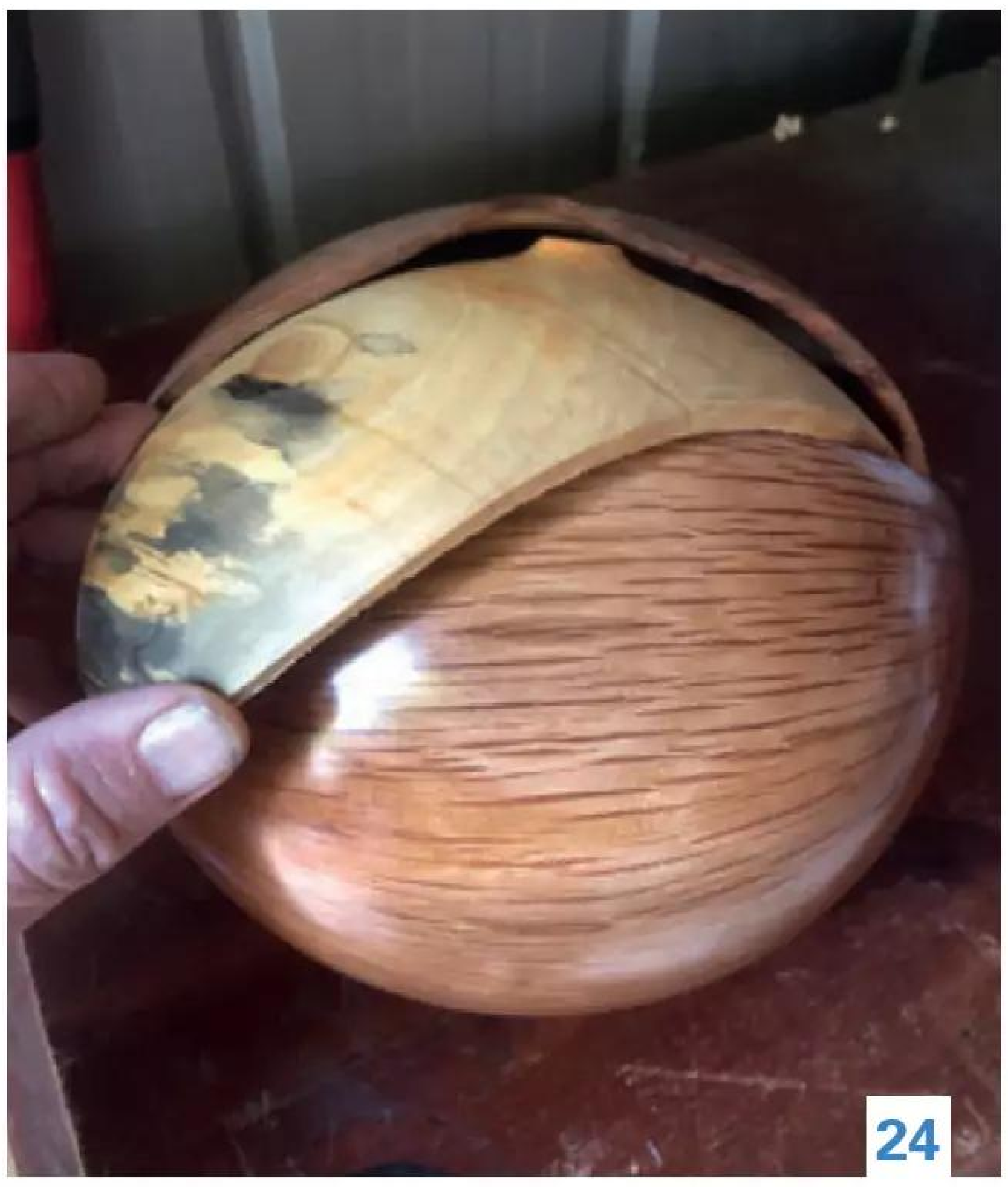
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19. The inner form is then hollowed to 2–3mm thickness.

20. After hollowing, the inner form is reverse chucked using the jam fit technique.

21. Here, the bottom of the bowl becomes the top. The spigot is removed and an opening turned.

22, 23. Showing the completed inner and outer parts. The sides of the inner form are sawn off so it will fit through the opening.

24. Fitting the insert can be tricky. Once it's in it can be superglued in place.

Fitting the insert

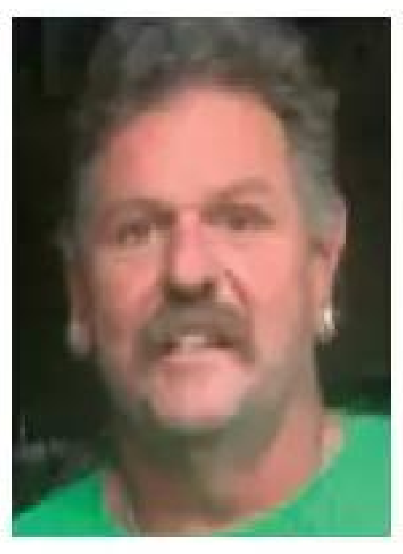
The last stage of the process is to remove material from the sides of your bowl. For this I use a handsaw. This is so it will fit through the opening of the outer form. This is why the opening needs to be irregular otherwise it wouldn't be possible to slide the piece in, (**photos 22, 23, 24**). Once the piece is inside it is just a matter of spinning it around and pulling it up into place and if everything has worked properly, the two profiles should match each other and then the piece can be glued in. I use superglue.

I have spent many hours trying to get the insert inside the outer vessel and with some of my pieces it can be very frustrating especially when it gets stuck halfway and I can't get it in or out.

One last thing to note. On vessels that have the opening past the widest point of the form the full profile cannot be done with a profile gauge. You must guess the lower section simply by eyeing it off and hoping that it follows the shape.

That is how I make my *Vessel in a Vessel* piece. A little bit fiddly but I think it is worth the effort!

Photos: Paul Barton



Paul Barton @paulbarton_woodartist lives and works on the Bellarine Peninsula, Victoria. He has exhibited his work throughout Australia and was awarded the Tasmanian Premier's Award for Excellence in Craft in 2023. Paul was also selected as a demonstrator for Turnfest in Queensland in 2024. His philosophy is simple, respect the material you work with. He believes that trees are truly beautiful things because they give us life. He is drawn to them and feels incredibly honoured to have the ability to use such a beautiful material. Paul highlights the natural defects that exist in all trees to varying degrees which give his pieces a natural organic look. Bark inclusions, decay, insect damage and fungal attack become focal points and in a simple way portray part of the living tree's life. He turns wood as it is part of his life, and he does not see that ever changing.

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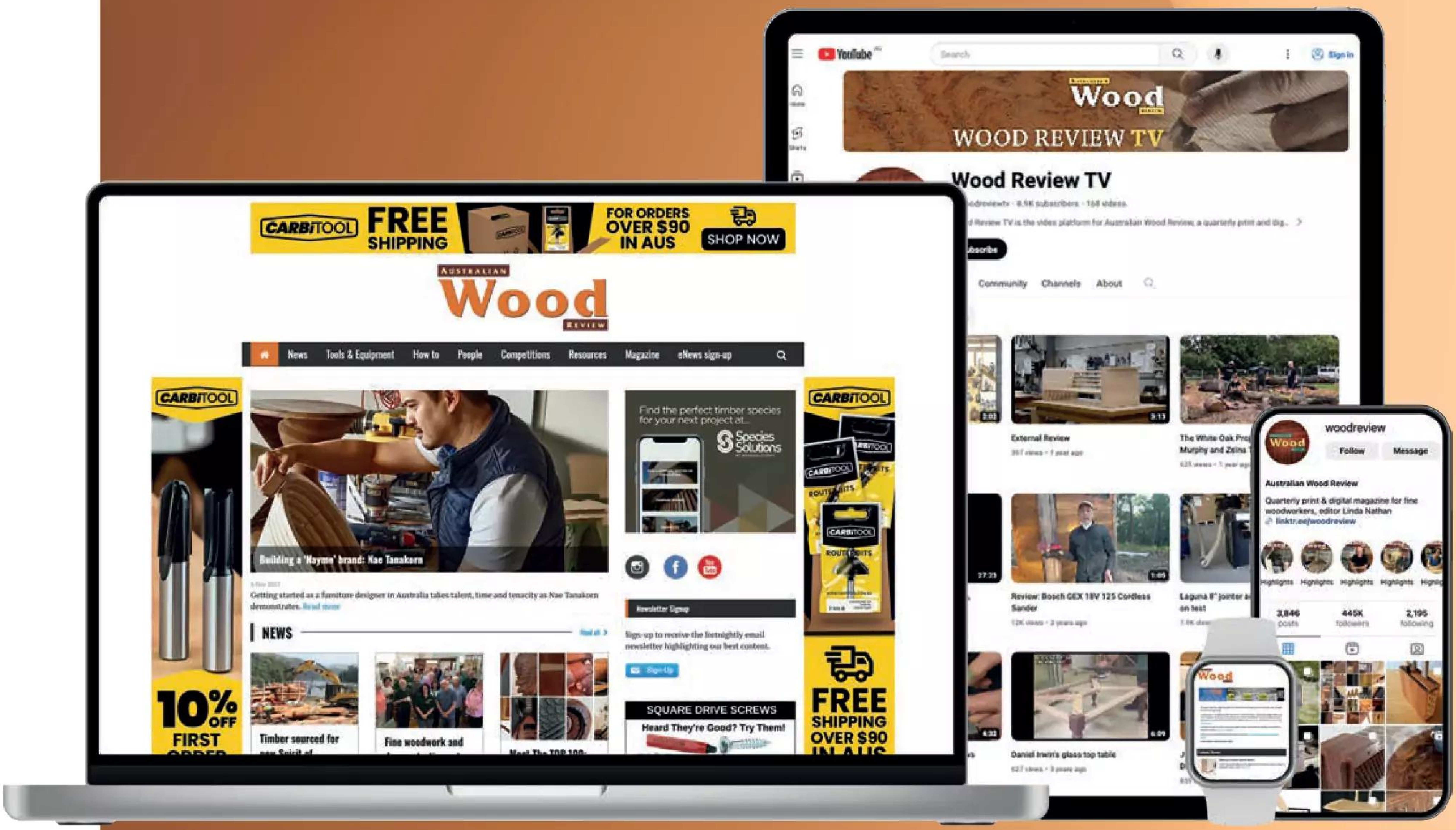

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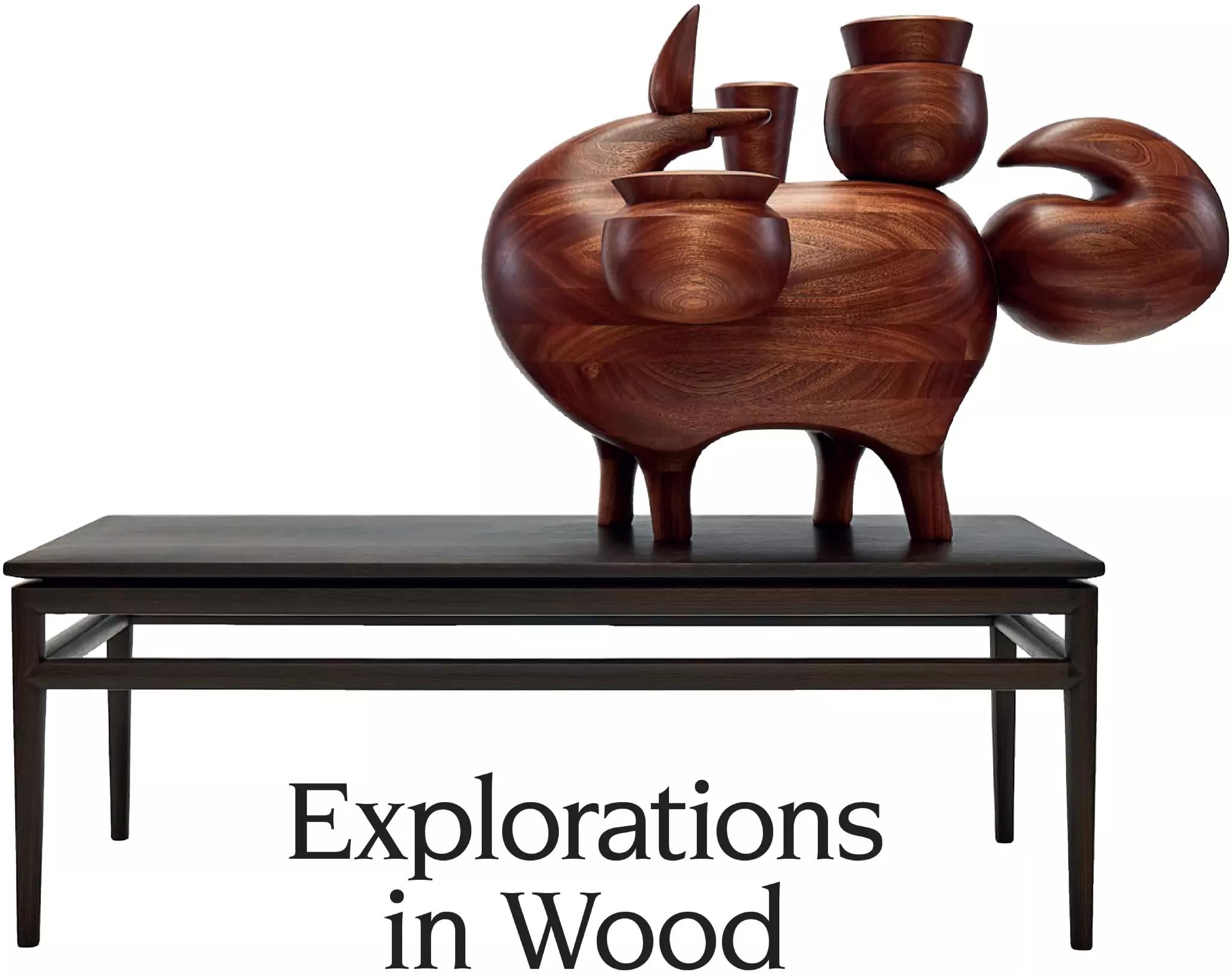


Explorations in Wood

A citizen of the world, Rex Kalehoff is a multi-talented woodworker and sculptor. He tells about his journey and also details the making of his Fox Valet bench.

Degrees in sculpture and furniture design followed by years of studio practice and teaching have given Rex Kalehoff the tools to shape and join wood to his will. He has travelled the world, literally, and in the form of his work that has been exhibited in New York, Japan, Korea, Thailand, Australia, Belgium and Luxembourg.

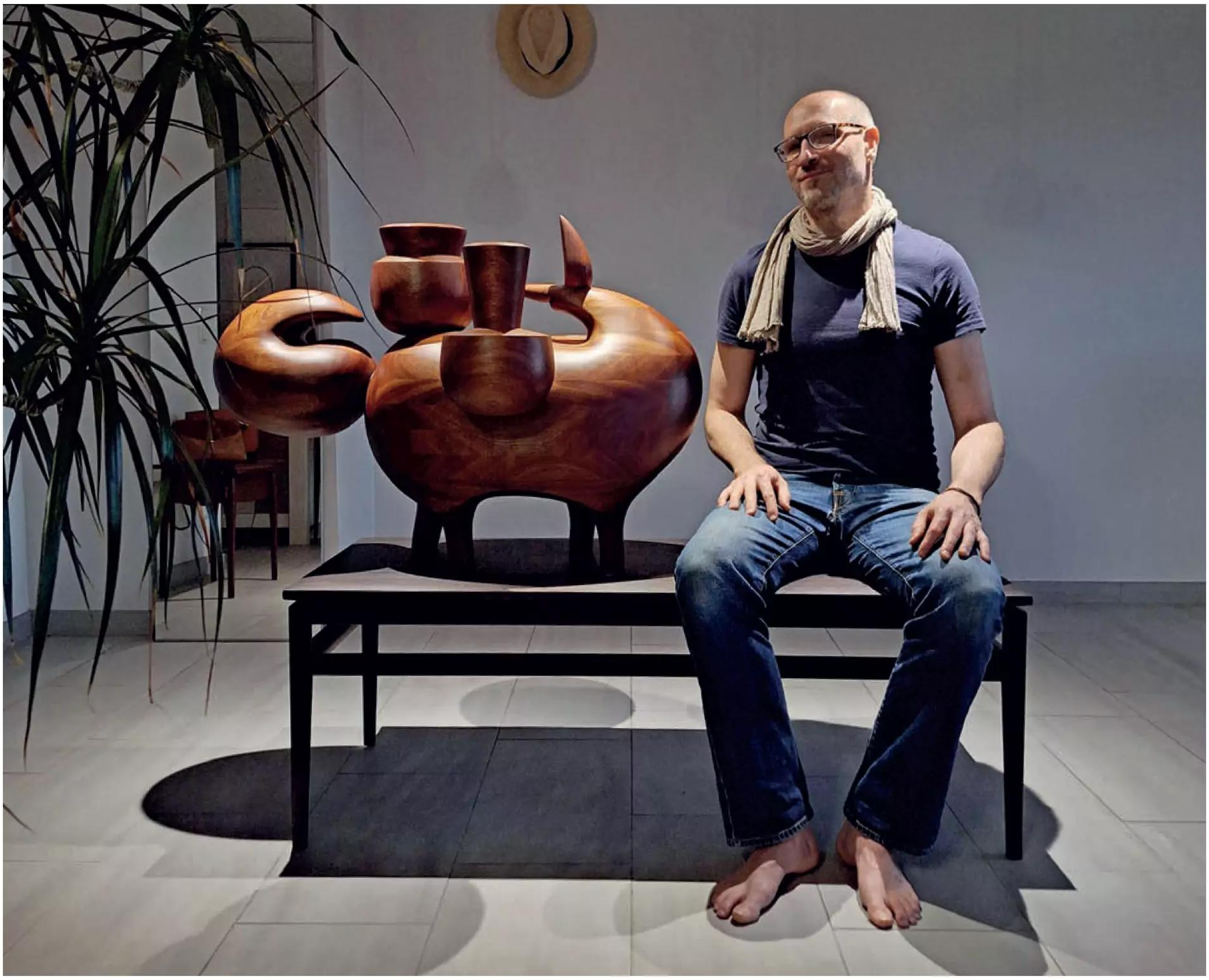
We asked Rex about his background, and also how he made one of the pieces he entered in Wood Review's 2024 Maker of the Year awards, the *Fox Valet bench*.

You call yourself a 'modern day explorer'. Who is Rex Kalehoff?

I am a wood sculptor, furniture maker, and educator. I was born and raised in New York City, on a gorgeous 1950s wooden sailboat called *The Magic Venture*. In addition to early childhood woodwork and design appreciation on the boat, living and travelling on the water instilled a strong sense of adventure and discovery that still inspires me today. I have remained committed to my artwork and creative vision, while going in and out of industry and teaching.

My curiosity and creative endeavours have led me into some wild experiences. I've made several trips to Australia, for study, to visit family and also to get to know some Australian woodworkers. I spent a good period at the University in Hobart, studying first-hand the endemic plants, history and wilderness areas of Tasmania and mainland Australia.

In contrast, I have also lived for several years amongst ancient customs and temple ruins in Southeast Asia, and more recently, become completely immersed in the marble carving world of Pietra Santa, Italy. I moved to



Luxembourg in 2022 to be with my partner, and opened Rexinlux Wood Studios, where I currently work.

Why do some makers choose furniture forms to express sculptural notions?

I am still exploring this topic myself, but certainly, various aspects of sculpture and furniture both inspire my work. My training and background in the two fields make them a natural pairing for me, and I'm definitely interested in how the two inform one another.

As a sculptor, I want to create incredible original forms, and say something meaningful with them. As a furniture maker, I want to show off technique and good design decisions, and create functional works that elevate the user's experience. I'm slowly getting better at achieving this, but still striving. Furniture forms and archetypes have an interesting relationship to the notion of daily rituals, which I am excited to be investigating in my work.

You say your work reflects on 'paradoxical and harmonious relationships between nature and culture, modern and ancient times, mythology and science'. And what is the 'personal mythology' you speak of? How do you tie it all together?

Inspired by the art of ancient and indigenous cultures, and the way that myth was conveyed through various symbolism and animal representation, I'm interested in the notion that furniture, and the objects we use, can inspire individualised stories and rituals.

Personal mythology is a term I use to describe empowering stories created by an individual that inspire their particular ritual and connection to an object. These myths are inspired by a person's unique life story, and the things that only they respond to.

These relationship pairings are a framework of universal themes from which I can interpret the world's history and current standing. My

Above: Rex Kalehoff with his *Fox Valet bench*, created for Luxembourg's 2023 Craft Biennial and shortlisted in Maker of the Year 2024. *Photo: David Angeletti*

Opposite: *Fox Valet bench*, sapele and solid fumed oak. 'An interpretation of a valet chair, offering a unique and contemplative furniture experience, while evoking fox-like attributes of playfulness and sophistication, wisdom and adaptability, masculinity and femininity.' *Photo: David Angeletti* personal encounter with these themes in the various places I have called home (New York City, Tasmania, urban and rural countryside Thailand, and Luxembourg, among others) have given me a wide-ranging perspective and insight into the universality we share. I like to think I'm making light reference to big issues.

What's your attitude to surfaces? Tooled, textured, perfectly smooth?

For years, I created strictly smooth and polished surfaces, thinking I was staying true to the material and highlighting unique grain patterns or tones. This was my MO, even on complex carved forms, meticulously sanding into all the corners and hard-to-reach areas to reach a perfectly soft and consistent surface. A uniform sanded surface was always key.

Recently, on much of my carved work, I have been enjoying creating my final surface with a bastard file, and not doing any sanding at all. This almost cuts the working time in half, and I've completed twice as many pieces. The bastard file leaves great clarity and definition of form and I love the subtle chaos in the tool marks that give the piece an over-all 'scuffed' appearance. Despite the randomness of tool marks, there is still uniformity in the surface.

How do you deal with the search for perfect curves and lines?

I like the boat-building term, 'fair curve', to describe a curve with no lumps or flat spots. Drawn, cut, shaped, carved, or bent – flowing lines are very important in my sculptural and design work. Whether they're wild pronounced curves that describe a form from nature, or the subtle doming across a surface that just removes the flatness, I feel very comfortable with curves. I don't think I stress it too much. Curves simply have to look right, and when things need to be perfect, or consistent, there is a process of planned manoeuvres and steps to achieve it.

3

What sort of hand tools do you carve with – powered or non-powered, or both?

I utilise all types of tools when carving, powered and non-powered, but it is always a process of roughing out the general shapes and then slowly refining the form. For smaller works, I use the bandsaw to block out a defined profile from which to carve. I love the bandsaw. I can easily cut things out the way I draw them

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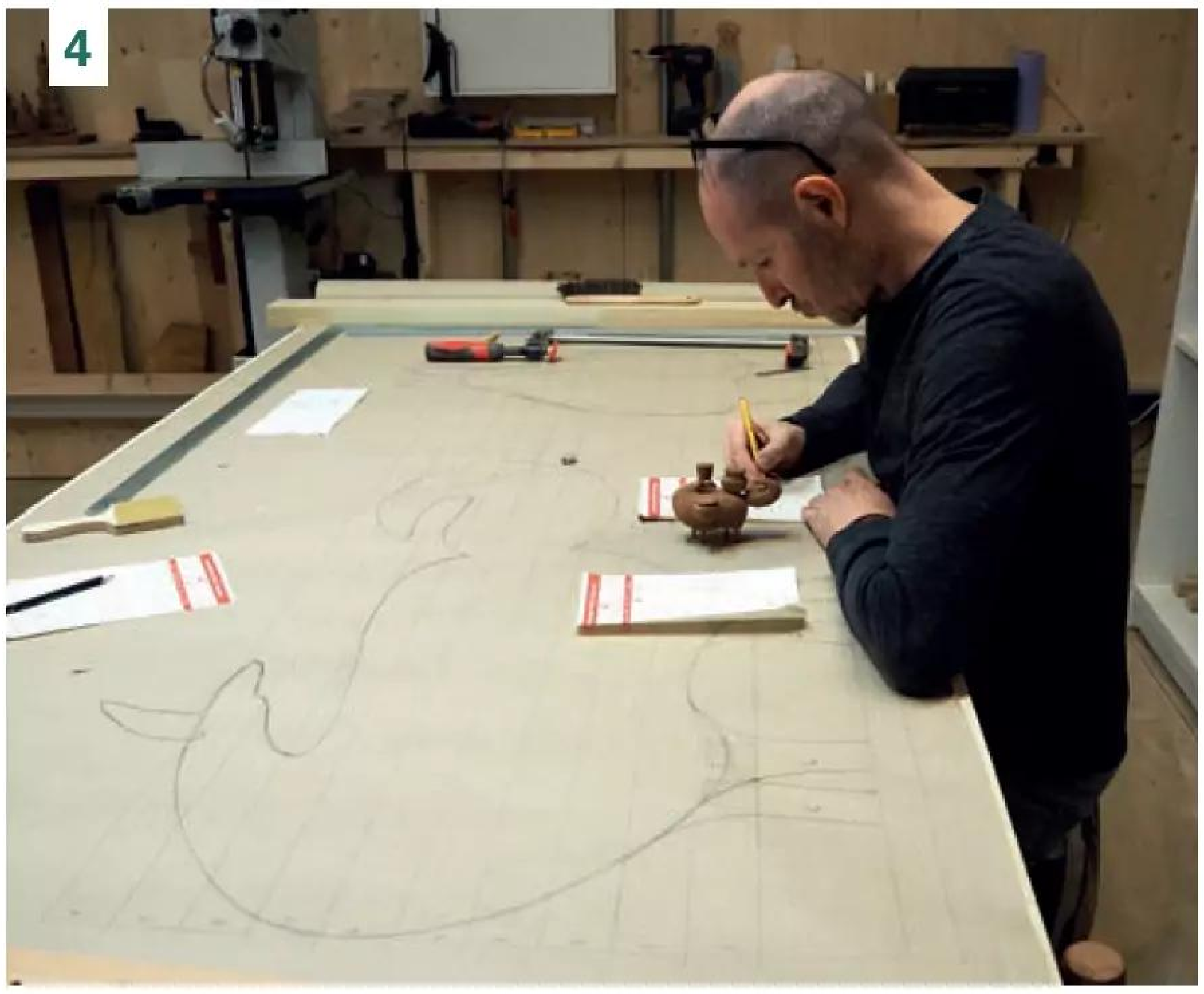

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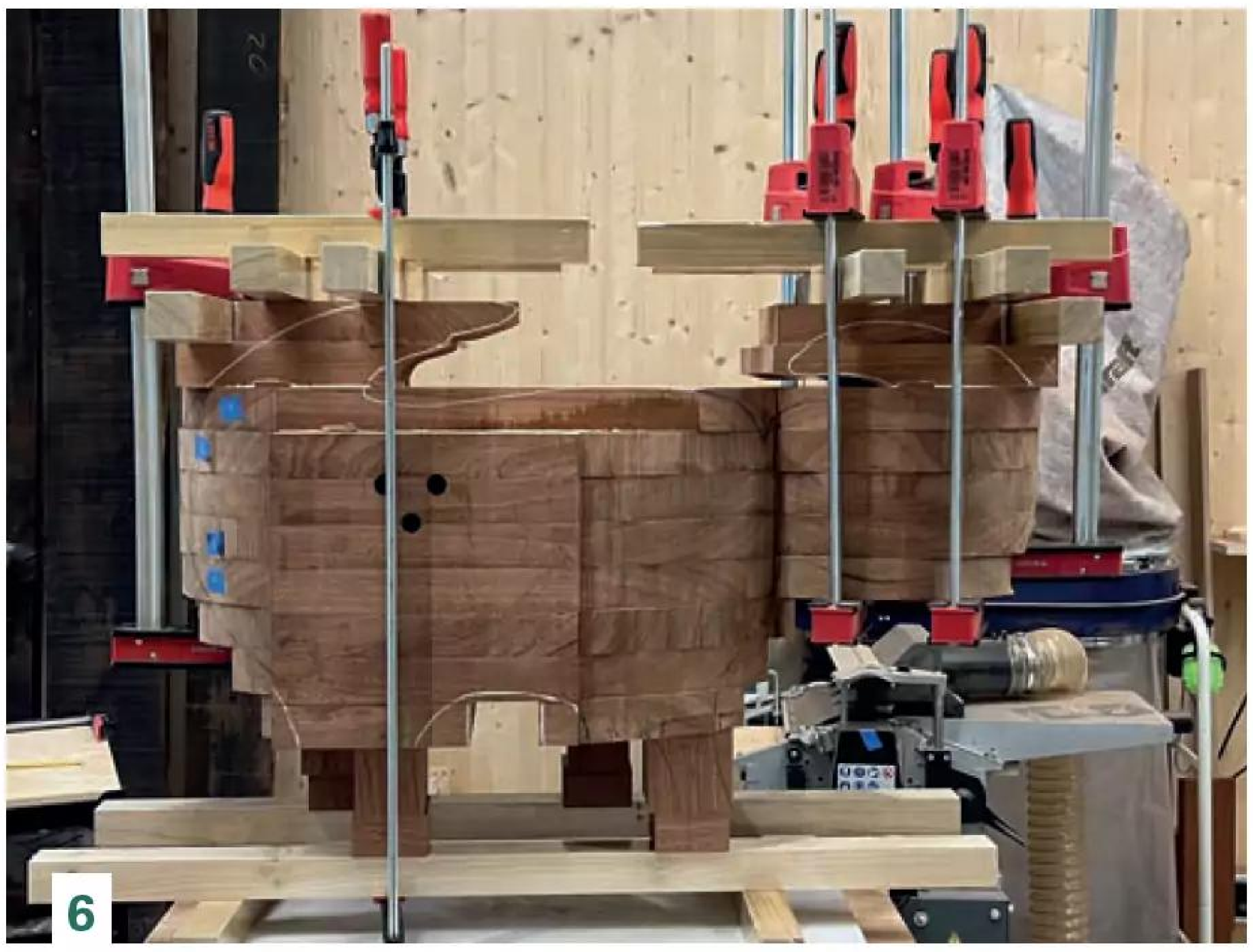

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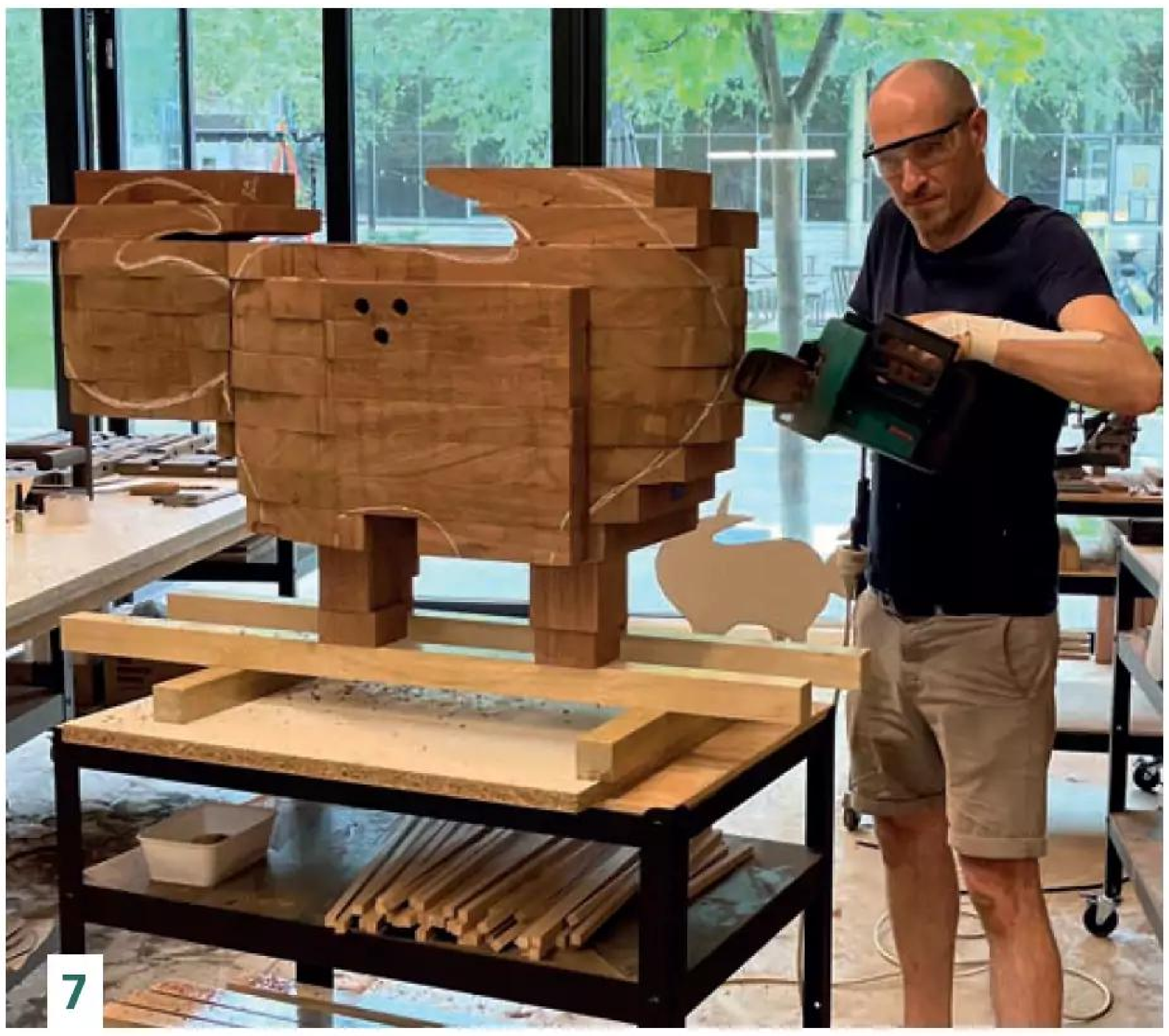

and quickly create dynamic forms by cutting the adjacent profile. It's all about quick removal of waste.

When there are internal areas to the profile, I generally use a drill press with various sized bits to remove the bulk, and immediately clean up with gouges, chisels, rasps, and files. Once I've established a clear profile image, generally I draw in various depth and location markers, and begin roughing out material, removing major areas with a gouge and mini angle-grinder.

When it comes to refining the forms and surfaces, I move to finer files and needle files, more chisels and gouges, carving knife, scrapers, and possible hand-sanding.

On larger works, I don't mind having to start out the roughing process with a chainsaw, and then a large carving gouge and angle grinder, before I get to more refined shaping stages with more hand tools. The point is, I enjoy all types of wood removal. I mostly think about efficiency and accuracy.

What's your attitude to machinery and technology?

My attitude is simple: use the right tool for the job, or the goal. I appreciate and support it all, in their different contexts. In the industrial setting, for example, I have witnessed

1. The *Fox Valet bench* frame was mortised and tenoned into a rigid cross-lapped grid. *Photo: David Angeletti*
2. The fox and vessels were carved from stack laminated sapele. *Photo: David Angeletti*
3. A scale model was first made.
4. It started with sketches which then became full-scale technical drawings.
5. The drawings were used to determine the sections of wood needed.
6. Gluing up the stack laminated sapele for the fox.
7. Initial roughing out of the fox form was done with a chainsaw.

Making the Fox Valet bench

This was an exciting project I developed for Luxembourg's 2023 Craft Biennial. The concept is that the fox companion offers additional utility to the bench seating.

Design development
Starting from a sketch, I created a scale model in wood, from which I hand-drafted full-scale drawings of the fox, the vessels, and the bench.

The drawings told me how much wood was needed for the construction of the bench, and each big stack lamination, as well as precise location of the joinery between the elements. This planning ensured a smooth process and also eliminated a good amount of material waste.

Sculpting the fox and vessels
After several days of milling, edge-gluing and stack-laminating, boom, I wound up with a nicely squared off and roughed out block for the fox. Next, I transferred the full-scale drawing of the fox onto the stack, so I could mark out the mortise and tenon joinery for the legs and ears, as well as mark the locations of the dowel joints that would later attach the vessels to the body.

I used a domino to quickly cut the mortises, and a drill press to accurately bore the holes. On the bottoms of the legs, I cut square tenons, that would later sit snugly into mortises in the bench seat, attached with brass hardware.

I began the carving stage by roughing out the profile of the fox with a chainsaw and large gouge, smoothing off with a carving burr attachment on an angle grinder. The form was refined with carving gouges, rasps, files and scrapers, and then hand sanded to a 220 grit finish.

Next, I moved on to the vessels, and stacked a bunch more material for the turned elements of this piece. Having already located and drilled the dowel holes on the body of the fox, I used a matching template to drill corresponding holes in each stack for the vessels. These were turned according to the original drawings and sanded to 220 grit. Each vessel was then hand carved to perfectly fit the contour of the body. Achieving a tight fit was a repetitive process of scribing in place, removing material, and checking again using the dowels as registration. The parts were then glued one at a time, securing the tight fit with strap clamps.

Bench joinery
Construction of the bench was pretty standard, with dominoed mortise and tenon joinery around the legs and frame. A rigid cross-lapped grid-structure was built to distribute and support the weight of the fox, which was mortise and tenoned to the inside of the outer frame. Fixed and expansion holes were drilled in the top of the framework for later attaching the bench seat.

There was an enormous amount of shaping to consider and accomplish in this piece, with subtle but significant doming or 'pillowing' on each face and edge of every part. Also, around each joint, a delicate hand carved transition detail was required.

Before assembly, I marked out and worked the length of each part with handplane, rasp, file, and then hand sanded to 320 grit, leaving the areas around each joint proud, for shaping after glue-up.

I glued up the bench in stages, completing the clean-up work and final shaping on the transition areas with chisels, files, scrapers, and sanding. Unfortunately, most of the impressive hand shaping is on the underside of this piece, so it's kind of a bonus for those who investigate it down there.

After milling and gluing up material for the seat, I cut it to final dimension and drilled holes for brass inserts that would attach it to the frame. Using a router on a large flat base, I routed the outer areas of the underside of the bench seat to create a stepped surface, leaving a raised section that would later drop into the top of the bench frame. These steps would allow attachment to the grid-structure, hide wood movement across the bench seat, and create the floating effect of the seat on the frame.

To match the carved pillowing treatment on the bench frame, subtle doming was also incorporated into the top and underside surfaces of the bench seat, using a handplane and a straight edge, and then hand sanding to a clean 320 grit.

Using a template, a footprint of the tenons on the feet of the fox were transferred to the seat and mortises hand cut to fit to allow for the brass bolts and inserts which make assembly and disassembly easy.

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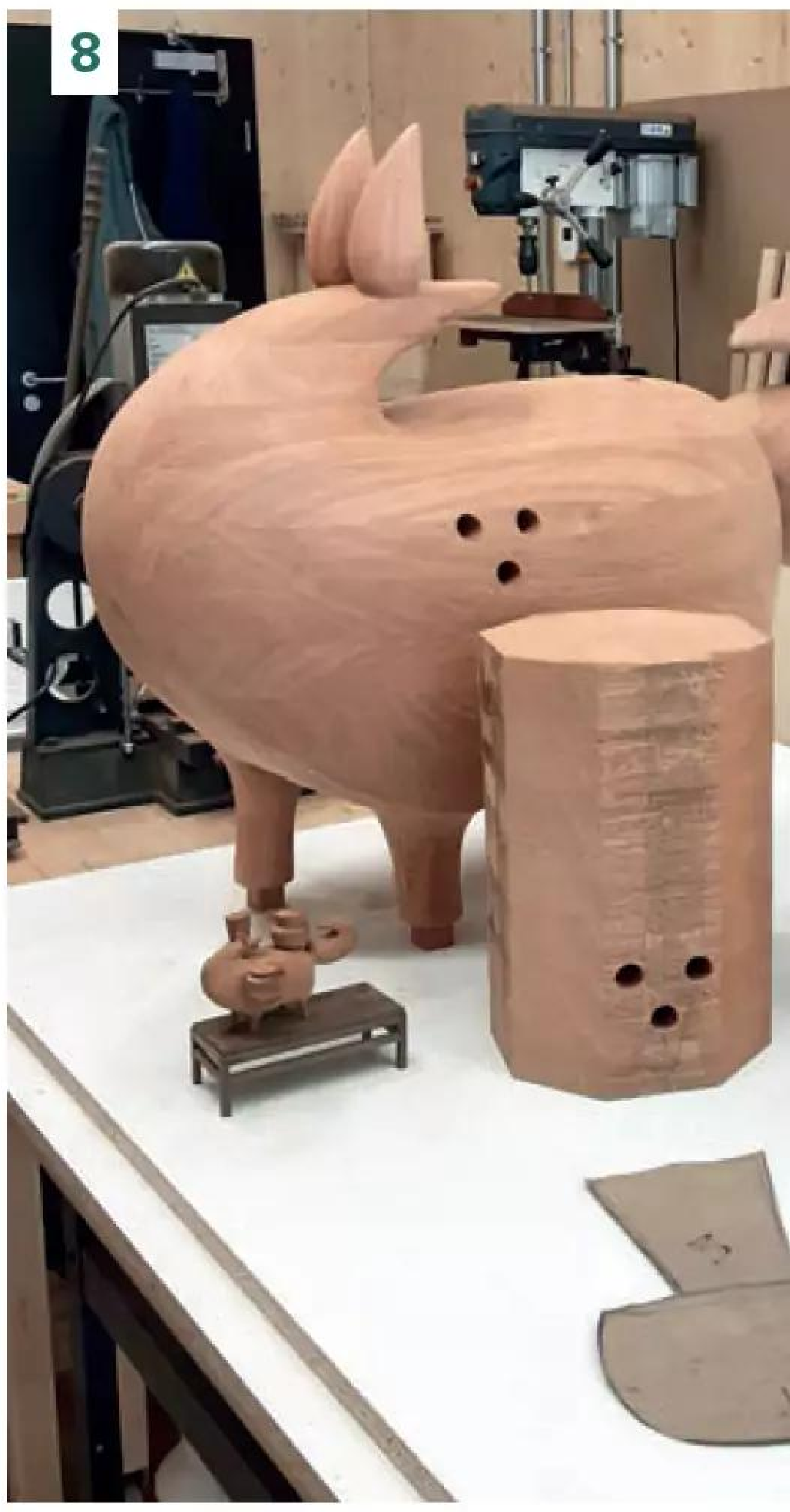


8. The completed carved and sanded fox along with stacks for the vessels, showing the pre-drilled holes for the dowel joinery.

9. Turning the vessels with the aid of a template.

10. Fox and vessel parts completed prior to assembly.

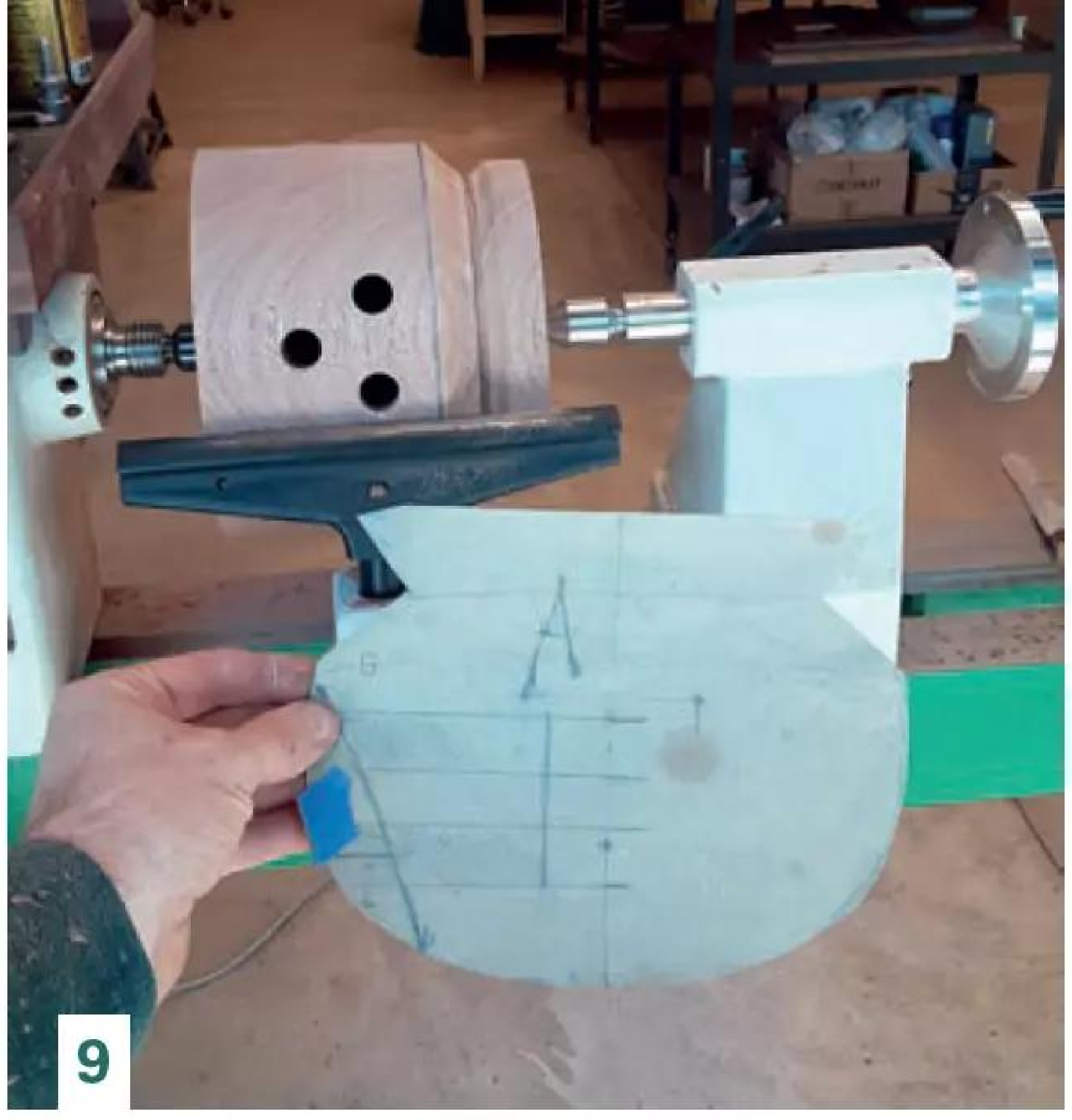
11. A completed turned vessel.

12. Each vessel was carefully hand fitted before gluing and securing with strap clamps.

13. The transition areas around the frame joins were left proud for later shaping.

14. Showing the bench underframe grid structure.

15. The transition of each join was shaped with files, scrapers and sanding.



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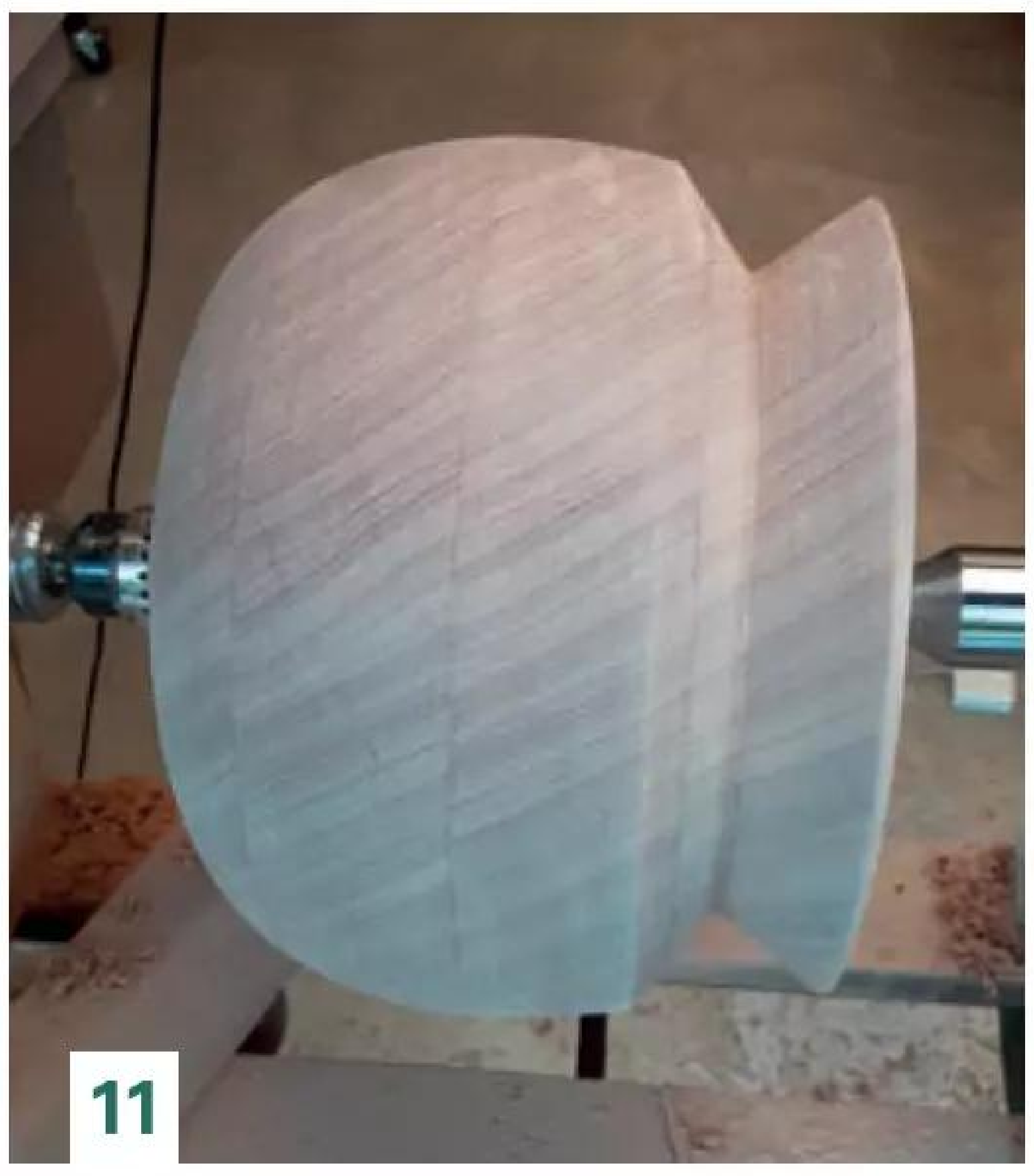

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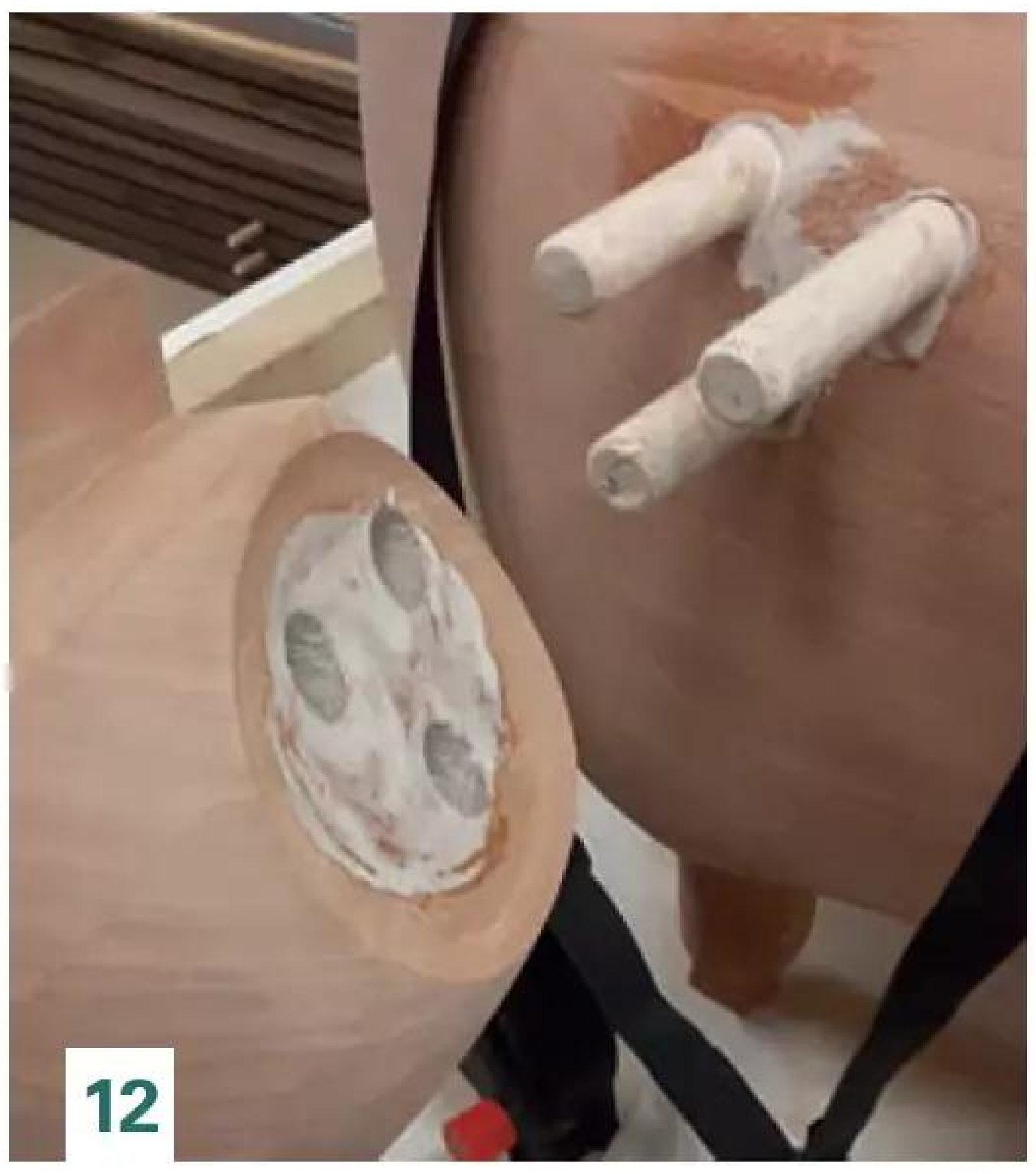

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and run incredible CNC and automated production machinery, and that makes sense in that context. But I am not a production woodworker and automation is not my goal.

I stick with traditional standard woodworking practices, which I consider to be a combination of technical hand tool and machine use, prior to the digital age.

My personal studio houses all the standard industrial machinery plus my precision hand tools and measuring instrument. I love the engineering and physics behind these machines and enjoy the physical aspects of setting up for each cut and manually running material through the blades.

For the same reasons, I love hand tools, shaping with them, sharpening them, cutting joinery by hand, and teaching hand tool use. Proficiency with hand tools is pure joy.

I've found that I am generally more interested in innovative works created by technical masters of traditions, than by works that rely on new/digital technologies. As far as new technologies go, I am not much of a computer or tech person, so CNC woodworking, for example, has not appealed or come naturally to my personal practice. If I had grown up in another time I may feel differently about it all.

What are you trying to say with your work?

My combined passion for the natural world and art from ancient and indigenous cultures, merges with a clean contemporary aesthetic and unique utilitarian design solutions, to create fun bold imagery that is fresh, playful, and contemplative. With universally accessible imagery, I'm hoping to convey that the objects we love and use have the potential to inspire story in each of us.

Process photos: Rex Kalehoff
Learn more about Rex Kalehoff @rexkalehoff at www.rexkalehoff.com

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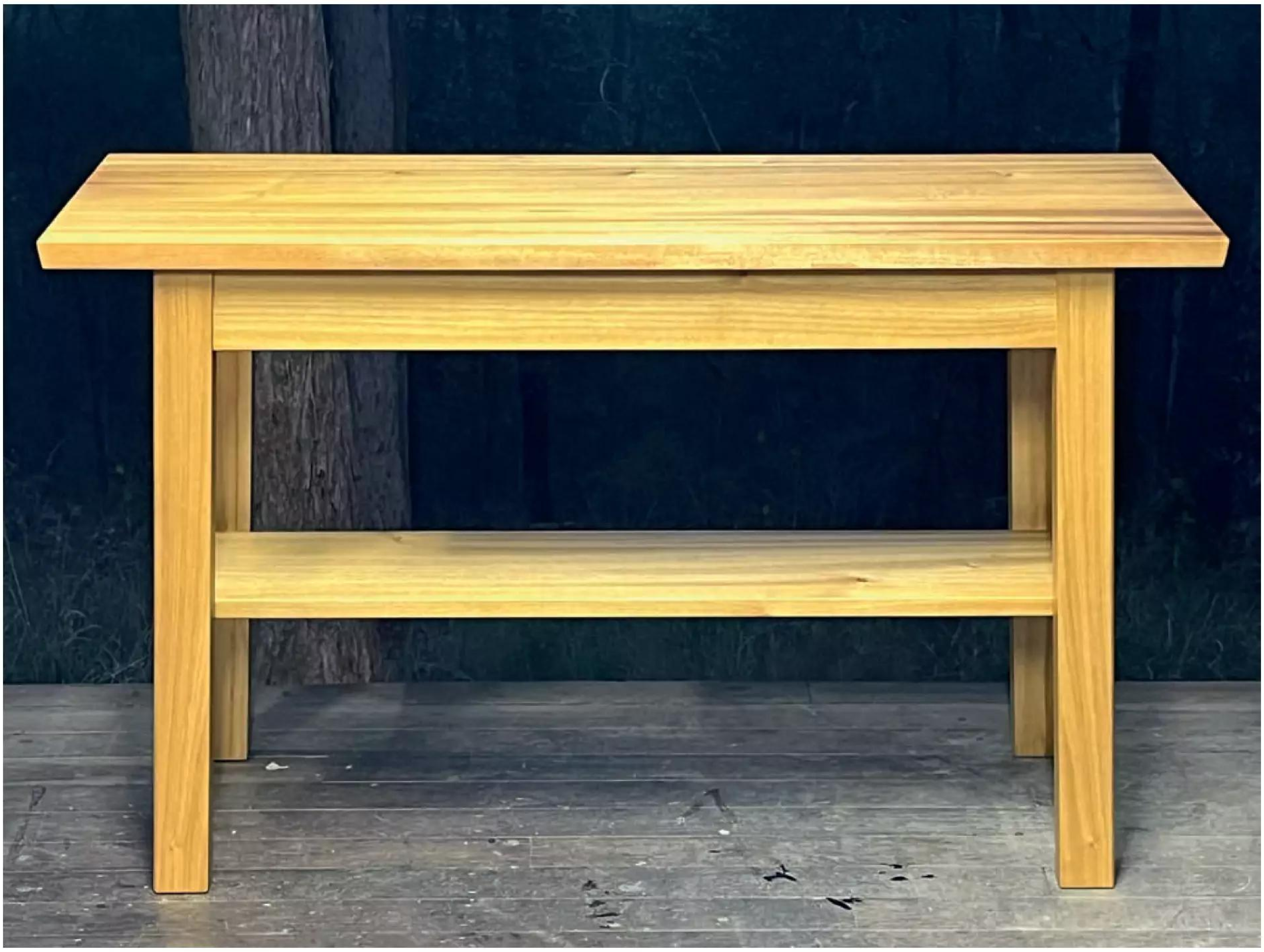


Gifted and Given

Gifted wood was used to make a simple desk that replaced another the maker couldn't bear to watch falling apart.

Story by Raf Nathan.

For many years I have worked weekly at a clinic near Brisbane city. In the front meeting room there is a desk, a chain store special that holds a media box and some odds and ends. Over the past few years I have watched its decline. It grew wonky, the corner of the top was peeling, and some months earlier a drawer front fell out.

One day, as a furniture maker, I couldn't take it anymore and decided to make a replacement – anything would be better. There is never money available so their budget was $100 as that would be the commercial replacement cost. That meant I was in effect shouting them, so it had to be made from wood already in stock.

Gifted wood

The wood used is Wau beech from New Guinea, *Elmerrillia tsiampacca (L.) Dandy*. It was given by the late Peter Eddowes, a forester and timber expert of international standing. According to Peter this particular wood came from the Wau river region in New Guinea, hence its name, although the beech part of the name he and colleagues decided on.

Wau beech is a softish hardwood that machines and carves well and has a gentle lustre and stripe. The wood was given to my wife and I as part of a trade and was also the only stock I had which fitted the budget.

The design

The feature is the angled legs. The wood I had was 38mm rough-sawn thickness which was laminated up to achieve the desired dimension needed for the legs. The beauty of this meant I could have a bookmatched outer face on the legs. Glue three pieces of wood together and rip this in the

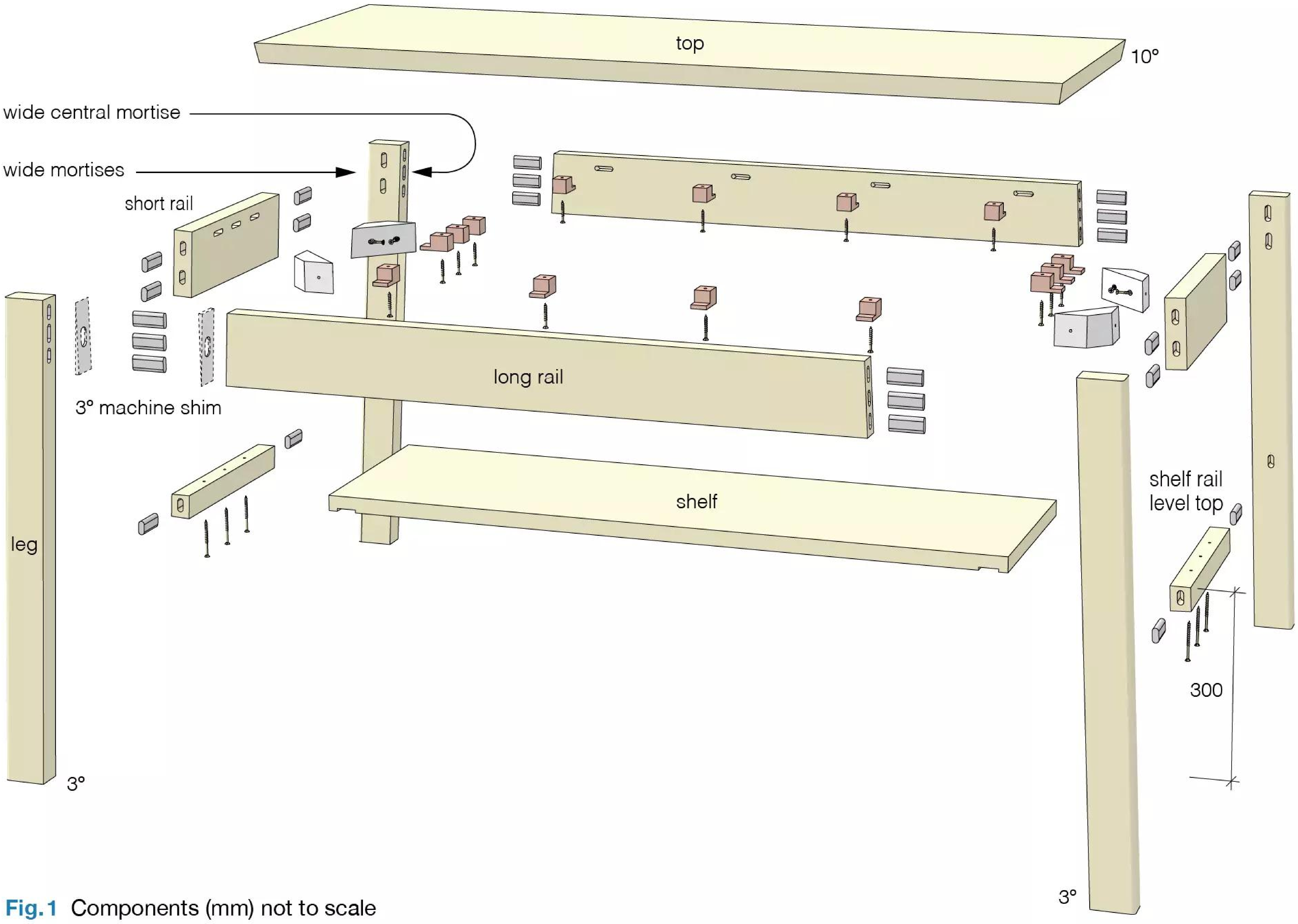


Fig.1 Components (mm) not to scale

middle to achieve the bookmatched faces (**photos 1, 2**).

Whilst most people would never see this detail it gives a far better look to the piece. Given the rather plain grain of the wood, I was looking for any details to make it look more appealing.

Arranging the grain

I once saw a YouTube video by a Japanese maker in New York who said to always orient the wood the way it grew. For a table leg that means keeping the top of the tree uppermost for wood to be used vertically. Apparently this helps keep the wood joinery straight and true.

How to determine this though, unless you followed your wood from sawmill to workshop with it all labelled? What I do in this case is hold the legs lightly with two fingers and then flip the board and repeat, feeling for the heavier end. I figure the end that goes to the floor is the heaviest part of a tree trunk towards the base. You would have to do a controlled study to absolutely verify this, however it does make for a good story.

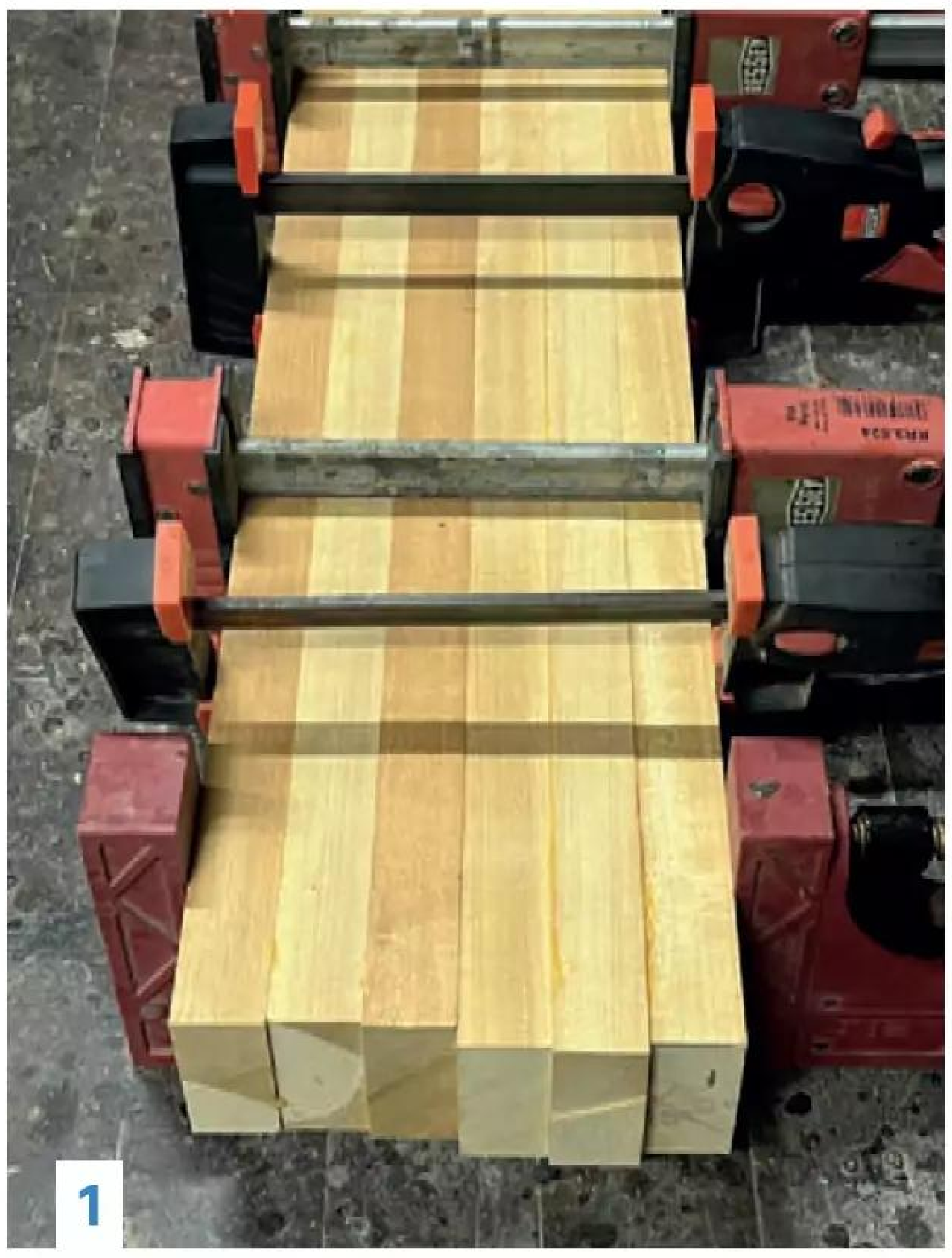
Square dress and prepare all wood to final dimensions, then saw to length. The main angle is 3° and was easily sawn on a mitre saw. Formerly 5° was my favourite angle for this sort of table but I now think 3° is better.

Main: Made to a budget: a simple desk by the author in Wau beech. The legs are angled at 3° and have bookmatched fronts.

CUTTING LIST mm

PART	QTY	LENGTH	WIDTH	THICKNESS
TOP	1	1300	460	32
LEGS	4	770	65	40
RAILS				
Long	2	980	110	32
Short	2	340	110	32
	2	340	40	32
SHELF	1	1100	250	26

Note: The legs and long rails are sawn at 3°.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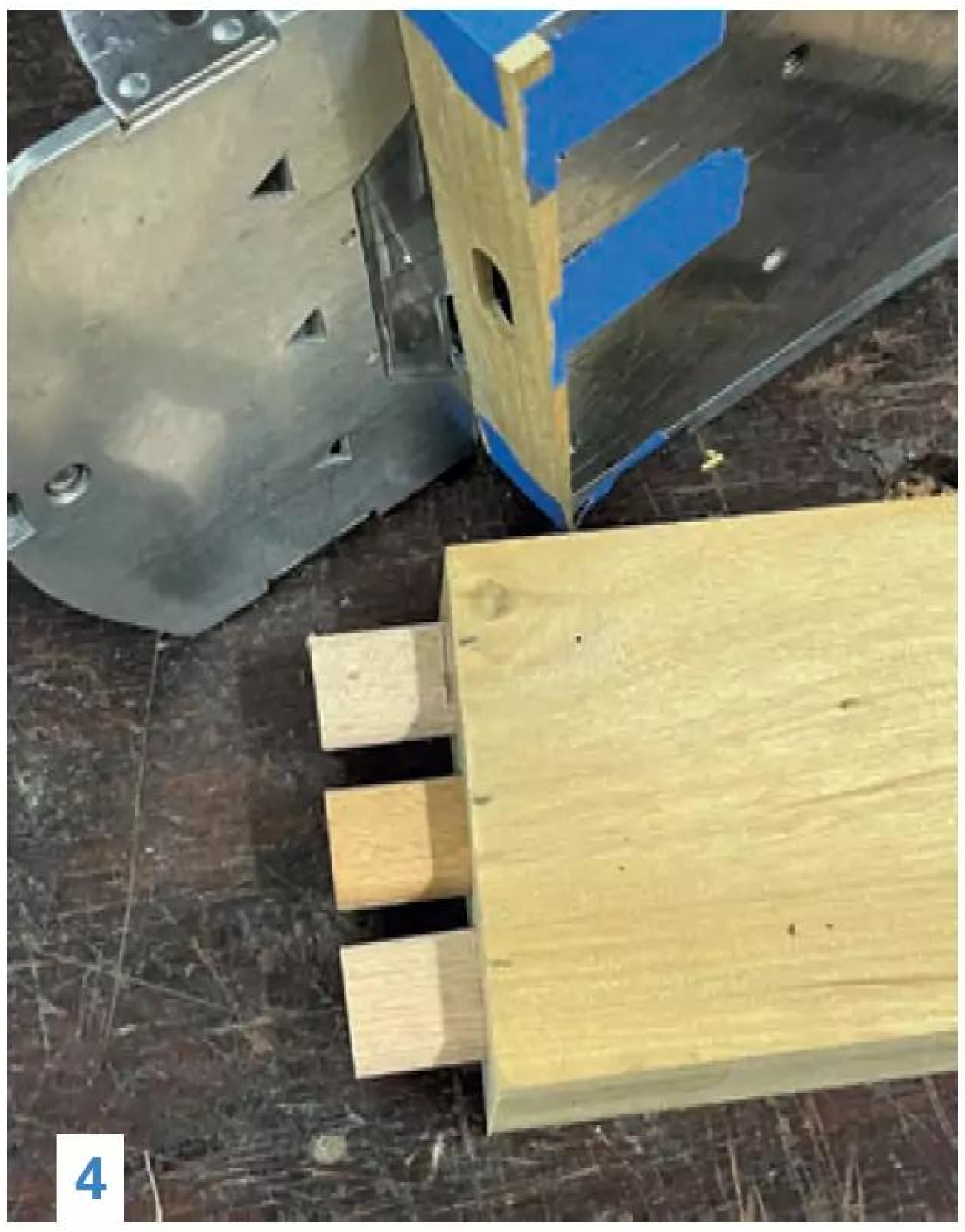
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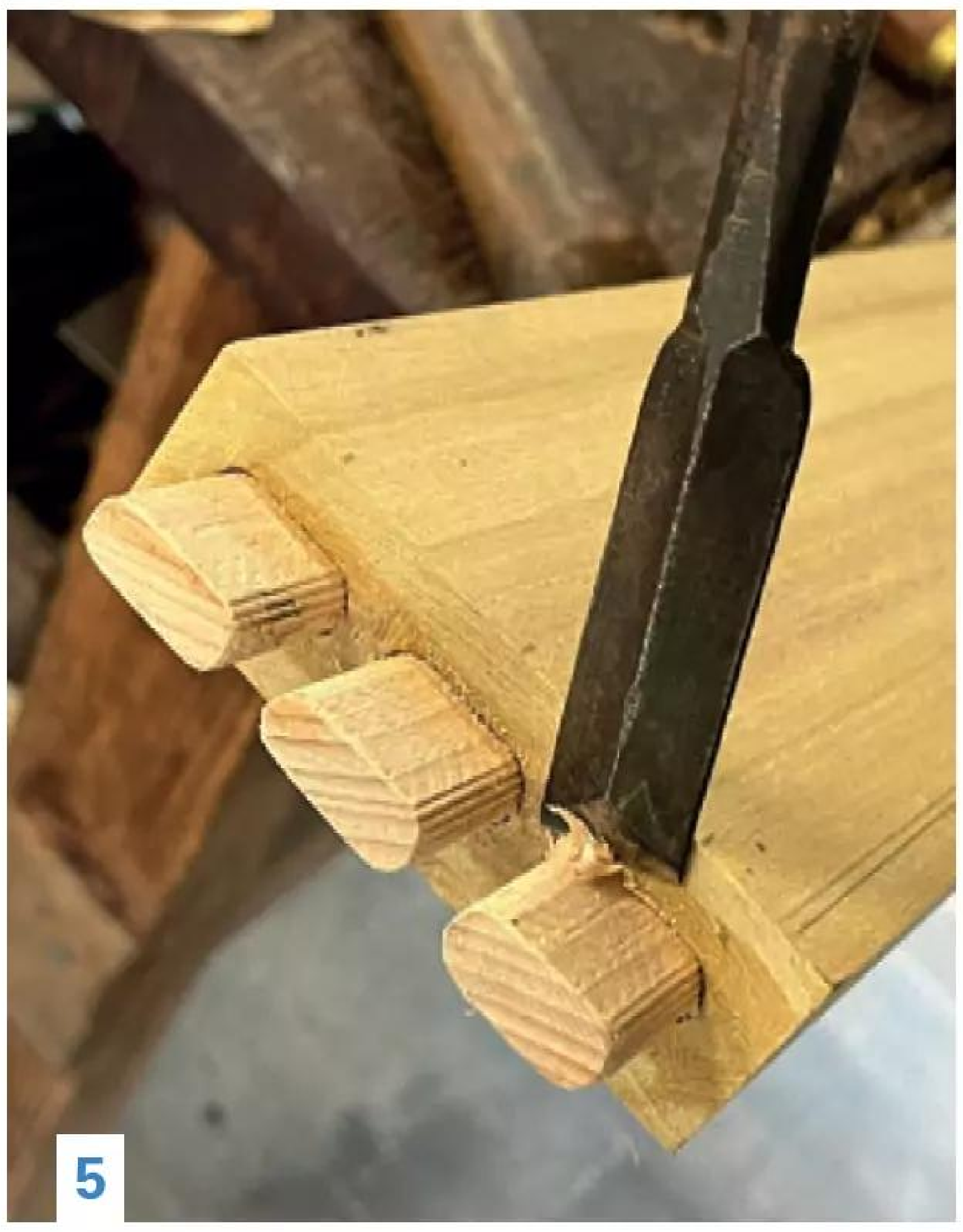
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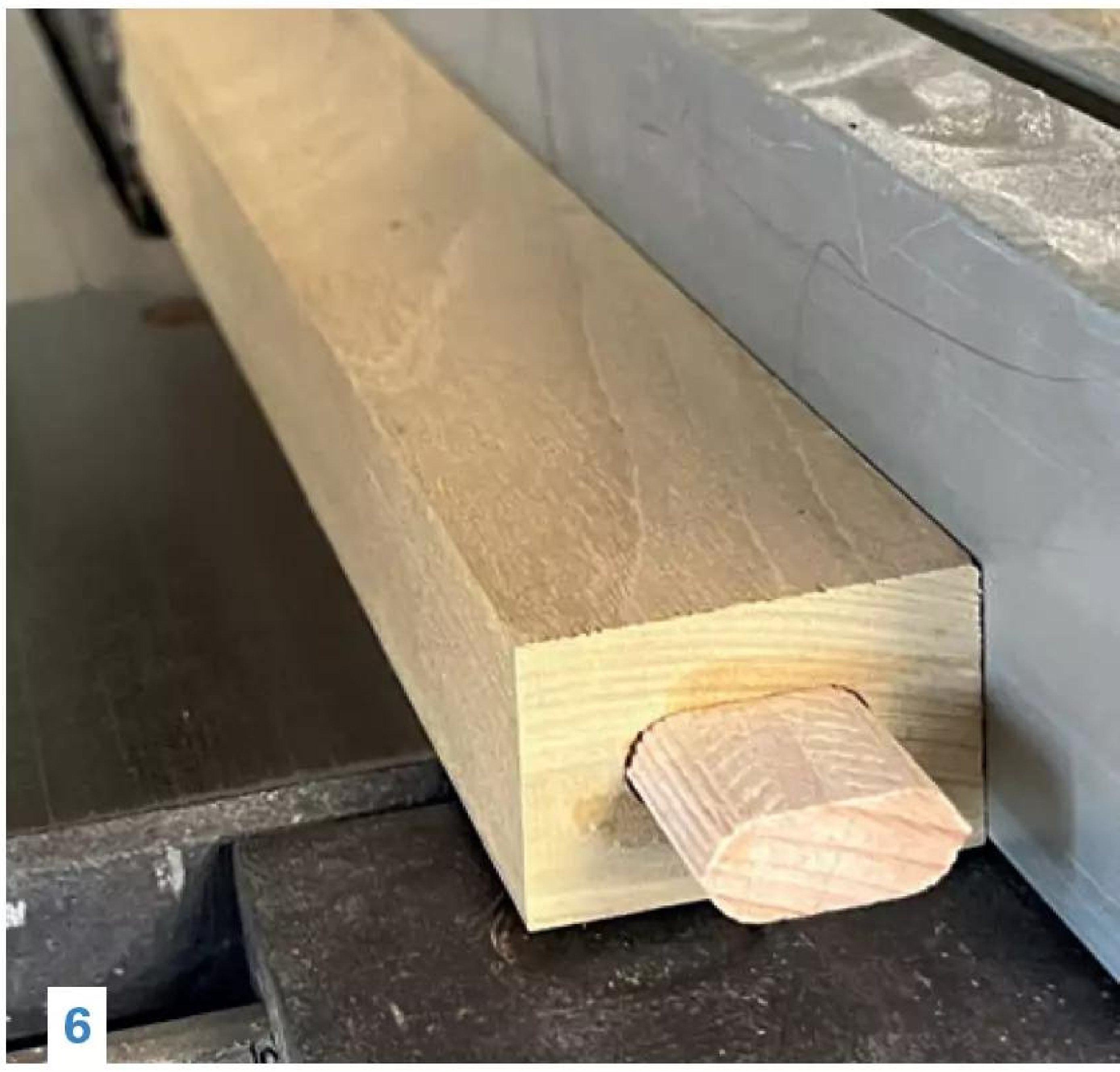
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1. To make the final 40mm thickness for the legs three pieces of thinner material were laminated together. Here two legs are being glued up at the same time.
2. When the leg lamination is deep ripped you get bookmatched faces on the middle face. Ripping with a bandsaw is better here as it removes less wood and keeps the bookmatch in order. The more wood you remove from the faces the more the bookmatch will disappear. Having said that I used a tablesaw for this process.
3. The rails and leg angles were easily sawn on a mitre saw.
4. To have the loose tenons entering horizontally into the long rails and legs, a 3° angled wedge was taped to the domino face.
5. The tenons were glued in place and then each joint was hand-fitted.
6. The lower rail has a 3° angle sawn on the top edge as this will support the shelf. It is hard to see this in the photo.

Keeping in mind to have the bookmatched faces of the legs facing the front, you can saw the angle at each end. The long rails are also sawn at 3° whilst the four side rails are 90° at the ends (**photo 3**).

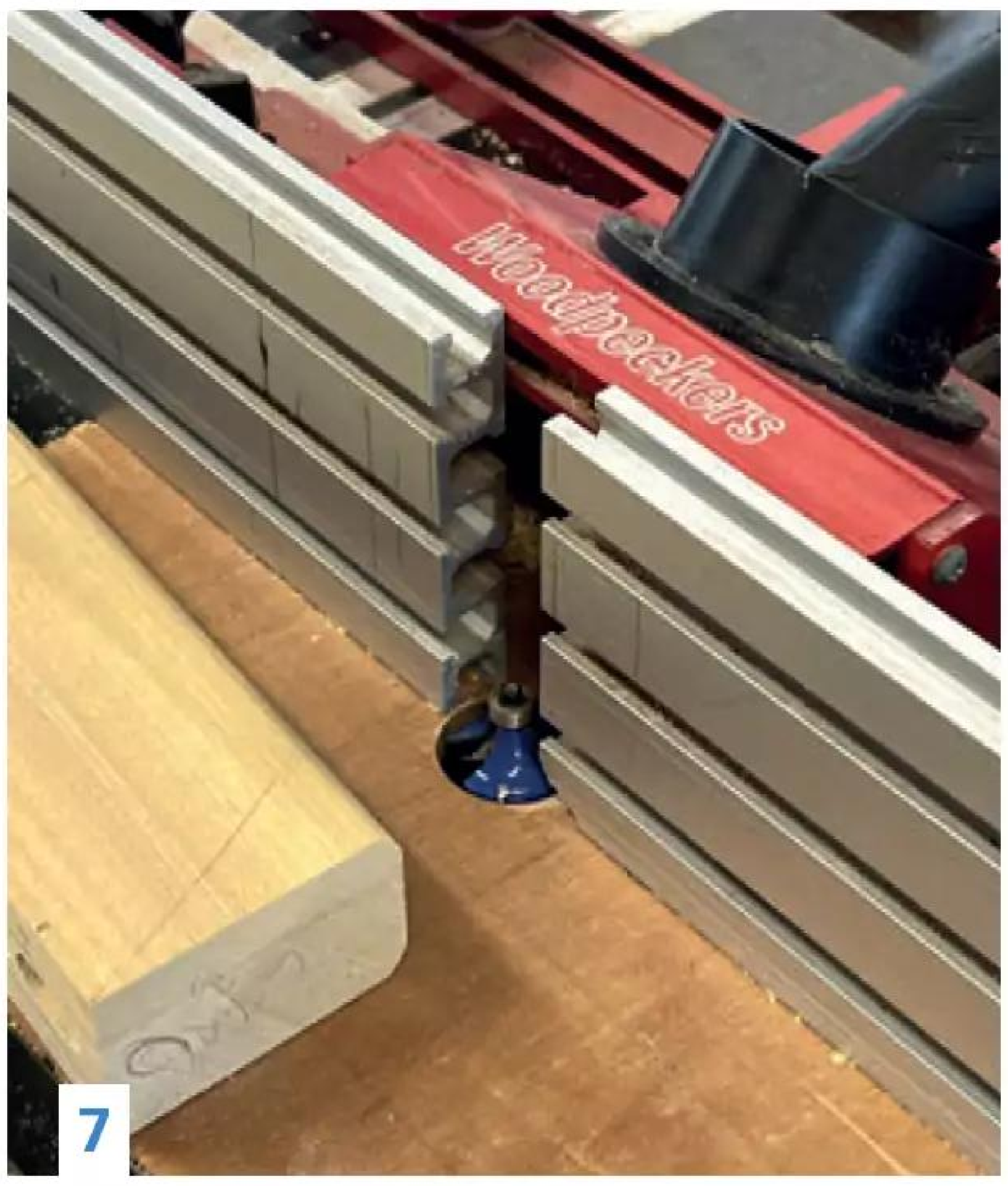
The joinery

Floating mortise and tenons made with a domino tool are used here. You could make your mortises directly on the edges of the wood, but given the 3° angle, that would mean the tenons would be angled down. I don't like that, so I am using a 3° angled shim on the domino face resulting in a horizontal mortise and tenon (**photo 4**).

There are three tenons at each leg to rail joint on the front and back. The middle mortise was cut wider but the outer ones were left at the standard width so I needed to hand-fit each of these joints. The side rails use two tenons for the upper and one for the lower rails (**photo 5**).

The lower rails will support the shelf, so it is important to saw and plane the upper edge of these at 3°. This is so any shelf will sit flat on it (**photo 6**).

A dry test-fit is important. I hammer the tenon faces a bit to compress the wood so they will slide into the mortises. Applying glue at the later assembly will swell the hammered wood back up to original size. Getting the rails and leg ends lining up perfectly is one of the goals, as planing mismatched endgrain later is a pain.



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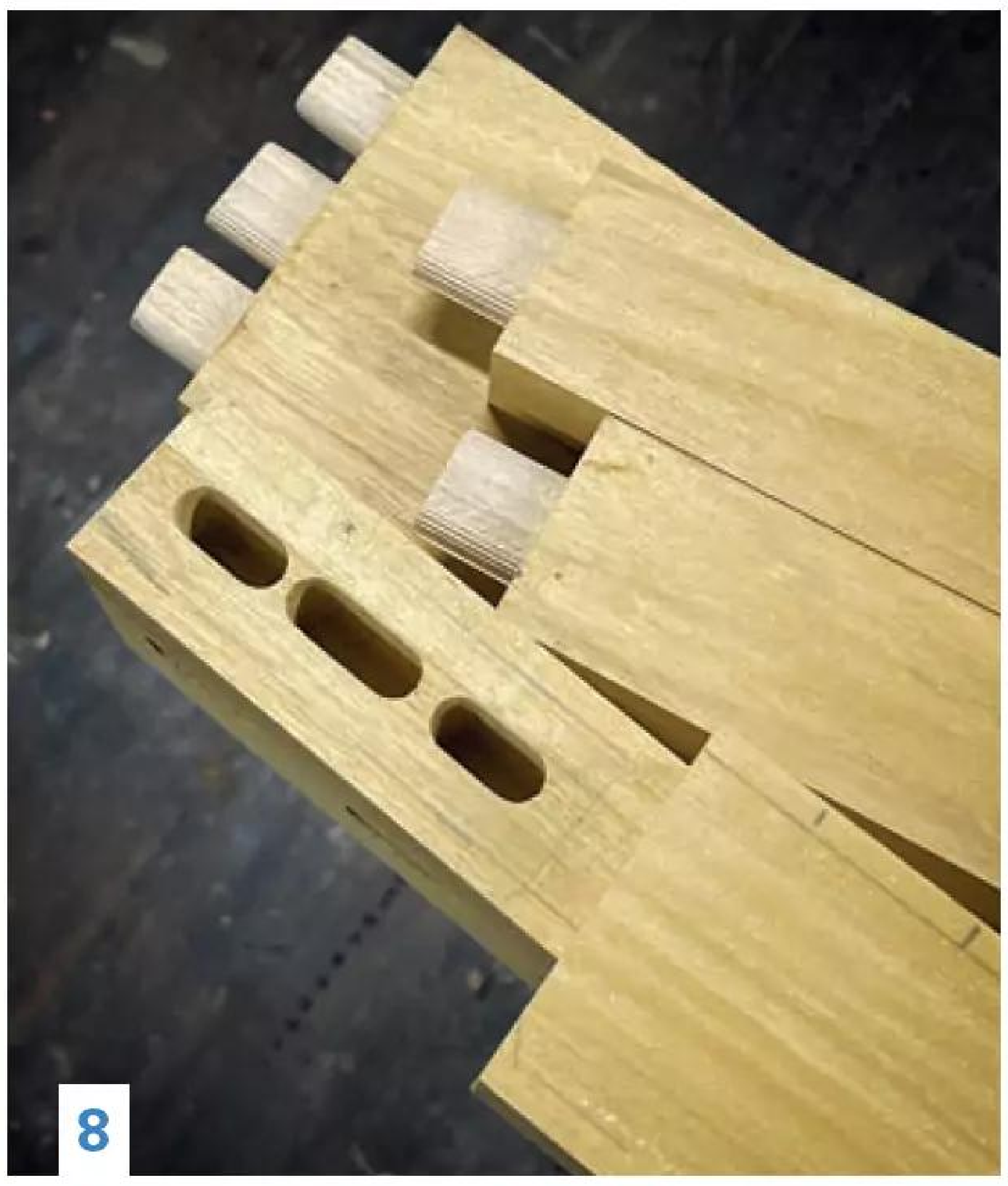

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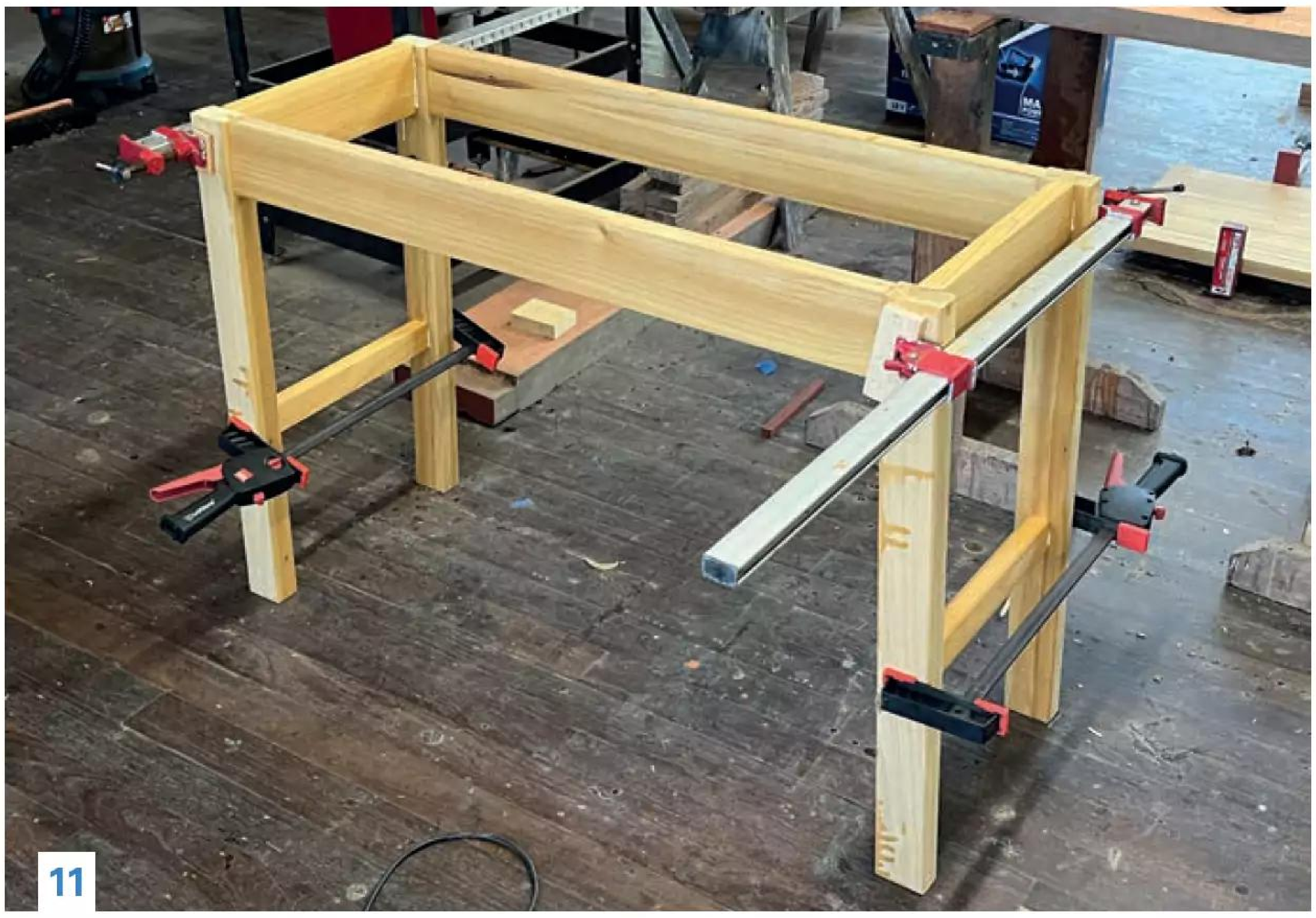

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Detailing and finishing the base

Sanding and detailing can be done now. All edges were given a small round-over whilst the outer edges of the legs were given a large round-over on the router table (**photo 7**). At this stage all the jointing is complete (**photo 8**).

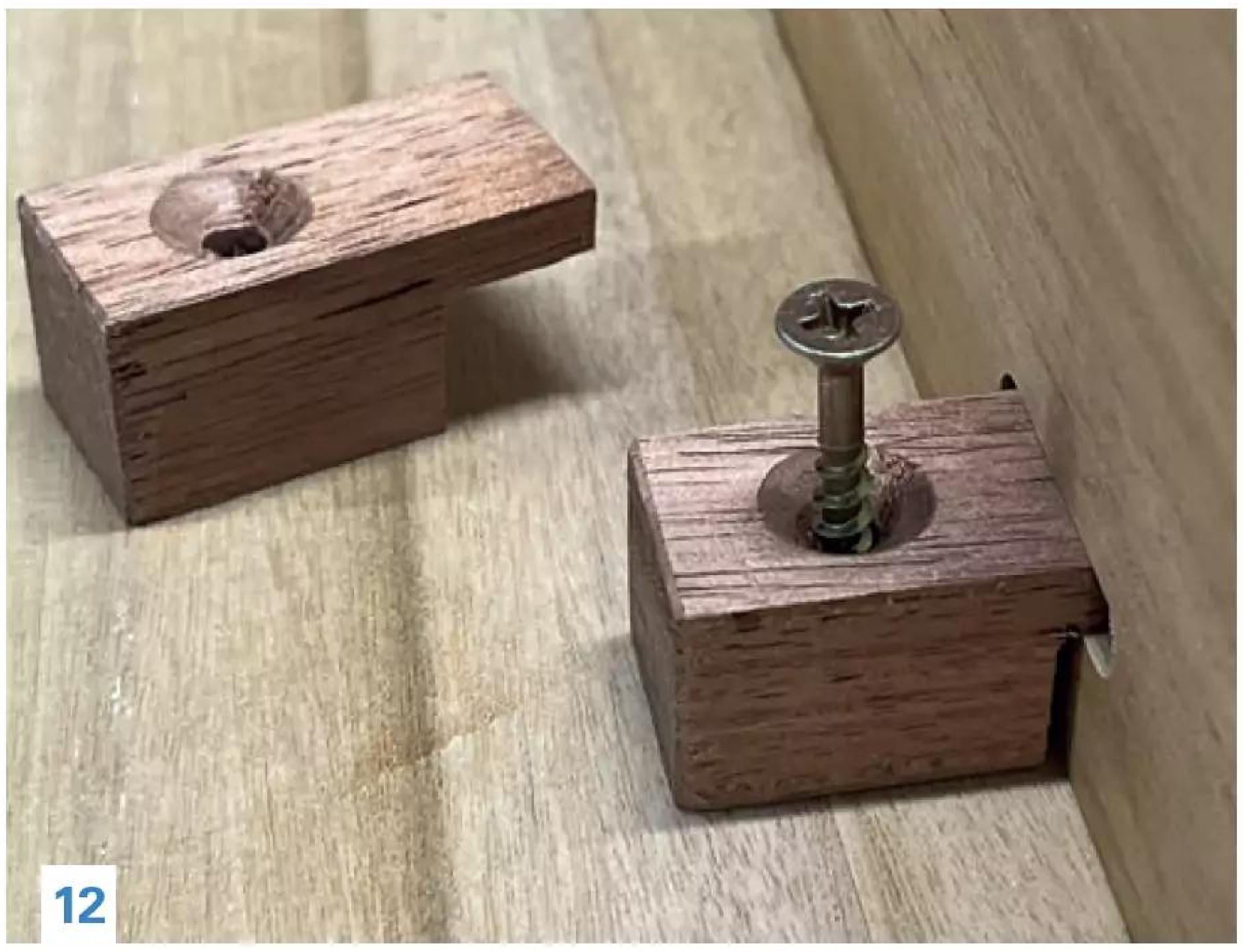
Pre-finishing a piece prior to gluing up was previously only a dream goal to me in the past. By the time all the jointing and sanding was complete I would be itching to get it glued up. Cleaning up subsequent glue runs at the joints is however also a pain. Pre-finishing means excess glue can be peeled off later.

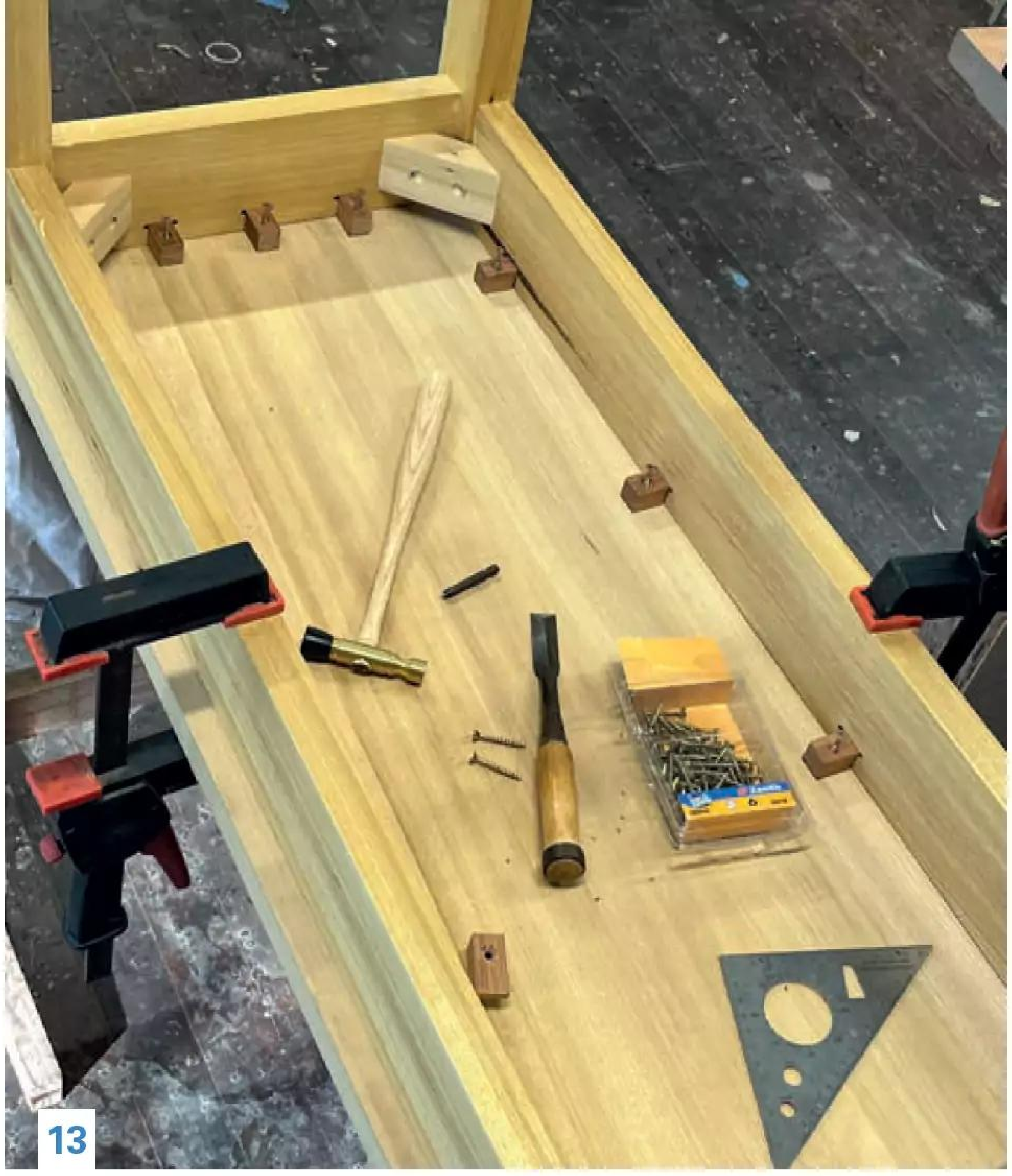
With the rails sanded and chamfered they were given one coat of hardwax oil, taking care not to let any oil get on the endgrain. The legs were sanded and pre-polished only on the joint faces as applying clamps and moving parts in assembly often leaves small dents. Final sanding and polishing of these areas is left till later (**photo 9**).

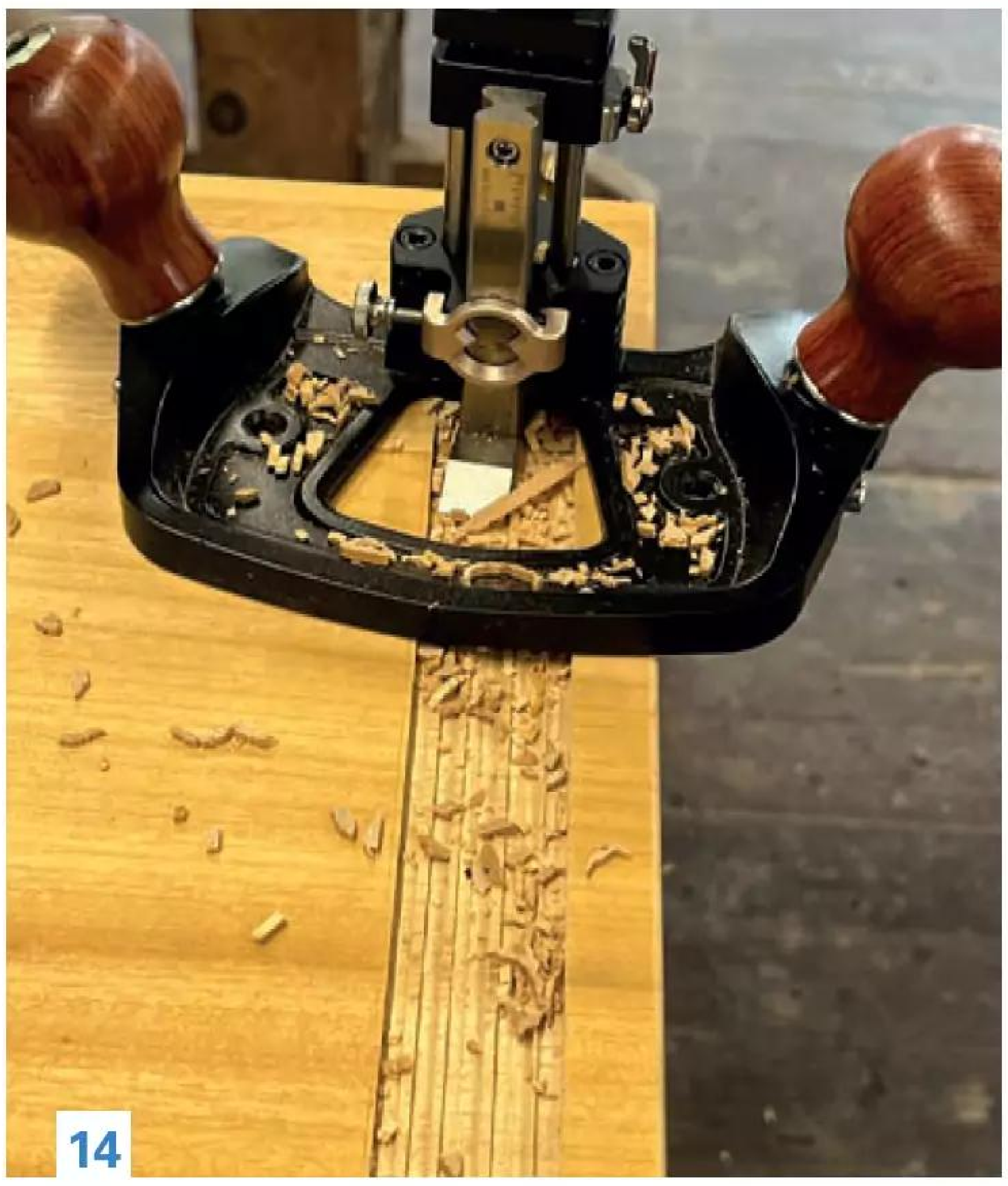
The legs and long rails are glued together first. Sight along the legs and make sure they are parallel when in the clamps (**photo 10**).

Glue all the side rails in place. The upper side rails will project a little on one long edge due to the angle of the legs. I plane this high point down later. Ensure the frame is square by measuring the diagonals, they need to be the same measurement (**photo 11**).

7. The outer edges of the legs were softened with a round-over cutter on the router table. This will make the legs appear lighter.
8. All the joints ready for assembly.
9. The faces of the legs with joints were sanded and detailed then given a coat of polish. Care was taken to not apply polish to the glue areas. The polish rejects glue and any runs can be peeled off later.
10. Long rails and legs were glued first. Check the legs remain are parallel. Note the angle pads between the clamp and legs.
11. Side rails are glued in place next checking all is square and level.







12. I made this table in a very dry spell so the top should only ever expand outwards in wetter weather. The buttons are thus positioned so that there is room for the top to expand. Note the gap between the rail and the button edge.

13 The top being fitted.

14,15. The shelf straddles the lower rail in a 5mm deep housing. This was sawn on the sliding table saw first to remove most of the waste and then cleaned up with a router plane.

With the glue dry, plane the upper edges of the side rails level with the leg tops. Level any leg ends that are proud of the long rails.

Cut the slots for the table buttons now. A domino tool was used for this. You can also now make and fit corner blocks. These help strengthen the corner joints and are glued and screwed in place.

Now is a good time to sand and detail the unpolished leg faces and detail all areas. The whole frame can then be given a coat of polish.

The top attaches with wood buttons to the frame. These need to be made and fitted (**photo 12**).

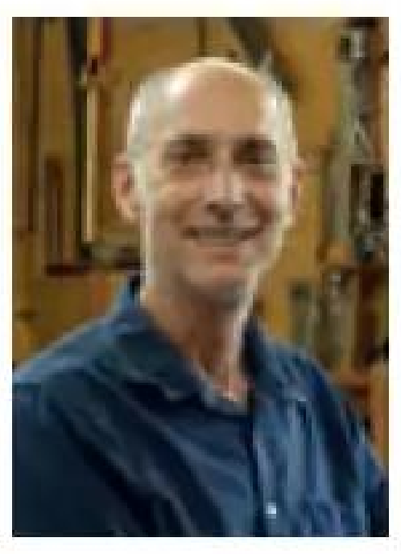
Making the top and shelf

The top is glued from three boards to make up the desired width. With the glue dry, the top is sanded flat to 120 grit then sawn to length with a 10° undercut. The underneath of the top is fine sanded and given a thick coat of polish and left to dry, then fitted to the frame. The top is then fine sanded in preparation for later polishing (**photo 13**).

The shelf is 240mm wide and 28mm thick. It is secured to the lower rails with three screws at each end. The screws are spread over 110mm so that the outer sides can move with humidity changes. The shelf sits on the rails in a 5mm deep housing made with the tablesaw followed up with a router plane to clean it up (**photos 14, 15**).

Polishing time sees two coats of hardwax oil given to the legs and four to the top. After a few days, the whole piece was given a soft wax and buff.

Photos: Raf Nathan
Illustration: Graham Sands



Raf Nathan @treeman777 is Brisbane based furniture designer maker and long-time contributor to Australian Wood Review.

Wood Diary

For more events and news sign up
to AWR fortnightly newsletters at:

www.woodreview.com.au

Diary listings are free. **Email to:** linda@woodreview.com.au

Note: Listings are correct at time of publication but may be subject to change. It is advisable to check details with the organiser before visiting.

23–25 MAY
Wood & Craft Showcase 2025
Woodturners Society Queensland
Sales, exhibition, turning demos,
food and drinks, free parking
Belmont Shooting Complex
1485 Old Cleveland Rd, Belmont Qld
www.wsqld.org.au

15–25 MAY 2025
Melbourne Design Week
An 11-day program of talks, tours,
exhibitions, launches, installations and
workshops across Melbourne with over
1,300 designers,
400 events and exhibitions across Melbourne,
its suburbs and the regions.
www.designweek.melbourne

26–30 MAY
LIGNA 2025
International woodworking fair
Celebrating 50 years: 'High-tech and tradition
from 1975–2025'.
Theme: Making more out of wood?
Hannover, Germany
www.ligna.de/en

12–14 JUNE
Design Show Australia
Interiors, lighting and furniture alongside Archi
Build Expo and Kitchen and Bath Show
Melbourne Convention and Exhibition Centre
www.designshow.com.au

13–15 JUNE
Q-Turn
A weekend of skill-sharing open to
woodturners, scrollers, carvers and burners.
Hosted by Ipswich Woodcrafts Club.
The Outlook, 4001 Ipswich-Boonah Road,
Boonah, Qld
Jim Tutin: 0418 194 184
Email jimtutin6@gmail.com
ipswichwoodcraftsclub.org

5–6 JULY
**Gympie Rotary Heritage
Maker's Fair**
Meet 70 craftspeople including wheelrighting,
blacksmithing and woodcraft arena
demonstrations and displays
Gympie Showgrounds, 77 Exhibition Rd,
Gympie Qld
www.makersfair.au

16–18 JULY
Australian International Furniture Fair
Trade show where brands showcase furniture,
lighting and products, industry seminars.
Includes Vibrant Visions in Design (VIVID)
design awards.
Melbourne Exhibition Centre
www.aiff.net.au

27 JULY
National Tree Day
Community tree-planting and nature care event
preceded by Schools
Tree Day on July 25
www.treeday.planetark.org

8–10 AUGUST
Woodturners Society Queensland
Sales, exhibition, turning demos
Mt Coot-tha Auditorium
www.wsqld.org.au

25–31 AUGUST
National Skills Week
This year's theme is 'Explore ALL the options'.
Showcasing career opportunities and raising
the status of skills of Vocational Education and
Training (VET).
www.nationalskillsweek.com.au

4 SEPTEMBER
**Maker of the Year,
presented by Carbatec**
Entries close 11:59pm AEDT for
Wood Review's awards for fine woodworkers
and wood artists.
Information and entry at
www.woodreview.com.au/moty

6 SEPTEMBER–5 OCTOBER
Biennial Clarence Prize exhibition
Supported by Clarence City Council
The Barn at Rosny Farm, Rosny Hill Road,
Rosny Park, Tasmania
www.clarenceartsandevents.net

10–19 OCTOBER
Sydney Craft Week Festival 2025
The theme for the 2025 festival is
'material intelligence'. This is an annual
city-wide event of making, presenting
contemporary craft
and skills workshops led by the Australian
Design Centre
www.sydneycraftweek.com

26 SEPTEMBER–14 OCTOBER 2025
The Evolution of the Wood Surfboard
30 wood boards on display dating back
to the early 1800s
Featuring renowned makers and including special
'mini-shows' and presentations.
Hazelhurst Regional Gallery & Arts Centre
782 Kingsway, Gymea, NSW
www.balsawoodsurfboardsriley.com/pages/events

30 SEPTEMBER–19 OCTOBER
Melbourne Fringe Festival
Melbourne's annual contemporary design
exhibition celebrates innovation and diversity
across a range of media and applications.
Design Fringe platforms avant-garde art,
furniture and design.
www.melbournefringe.com.au

6–10 OCTOBER
Wood Dust backstreets
Workshops and live events with Australian
and international craftspeople
Wood Play Studio, Coburg, Victoria
www.wooddustaustralia.com.au

10–11 OCTOBER
Cooroora Woodcraft Show 2025
Displays of work by club members and
woodworkers from other clubs, as well
as works produced by talented local
school students.
Memorial Hall, Maple St, Cooroy, Qld
Email: show@cooroorawoodworkersclub.com
www.cooroorawoodworkersclub.com

10 OCTOBER–19 NOVEMBER 2025
MAKE Award
Biennial prize for innovation in Australian
craft and design
Finalist exhibition
Australian Design Centre
101–115 William Street, Darlinghurst, Sydney
www.makeaward.au

22–23 OCTOBER
Melbourne Build Expo
Construction and design show featuring
12,000 attendees, 450 speakers, 300 exhibitors,
networking parties, six conference stages
and more.
Melbourne Convention Exhibition Centre
(MCEC)
www.melbournebuildexpo.com

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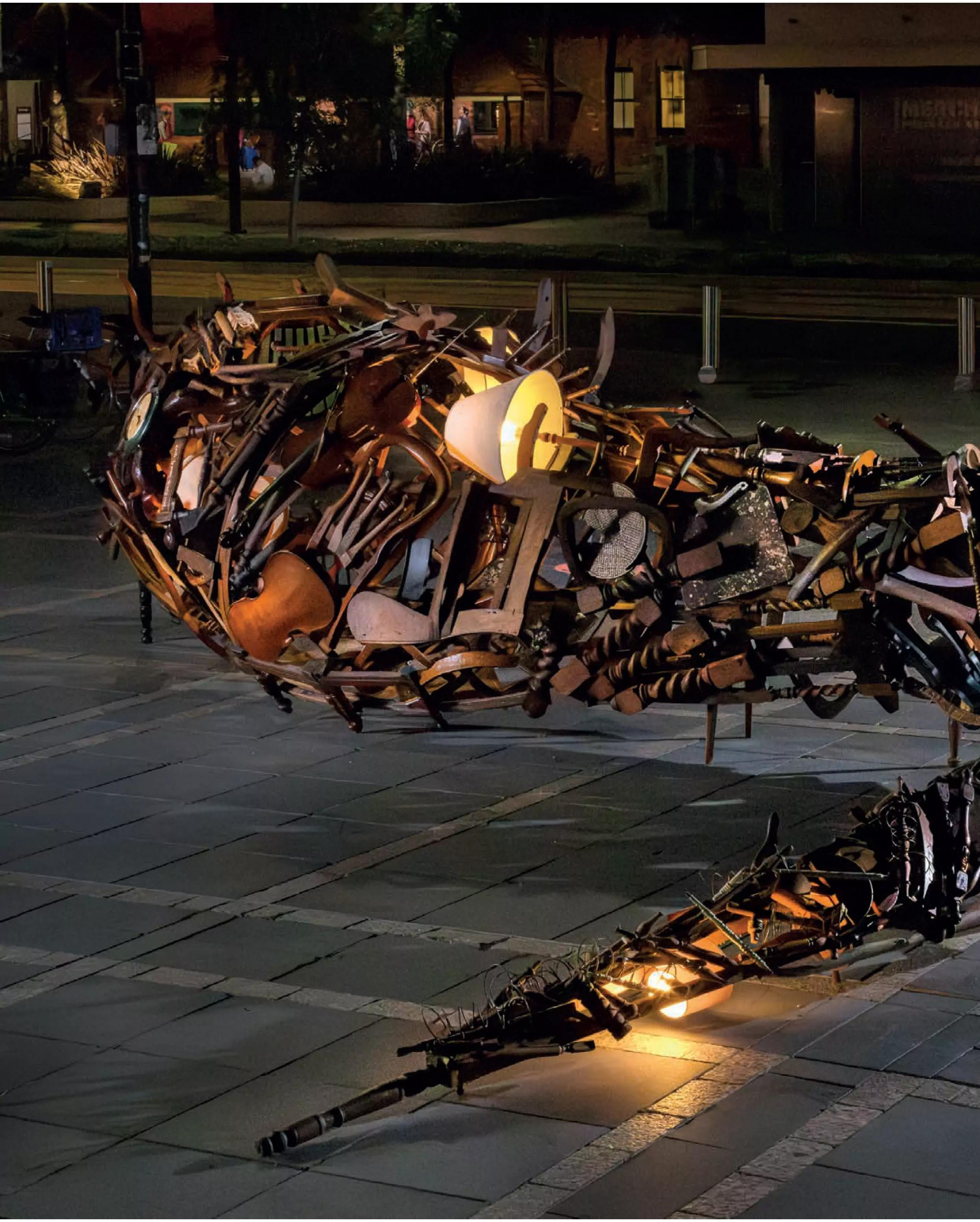
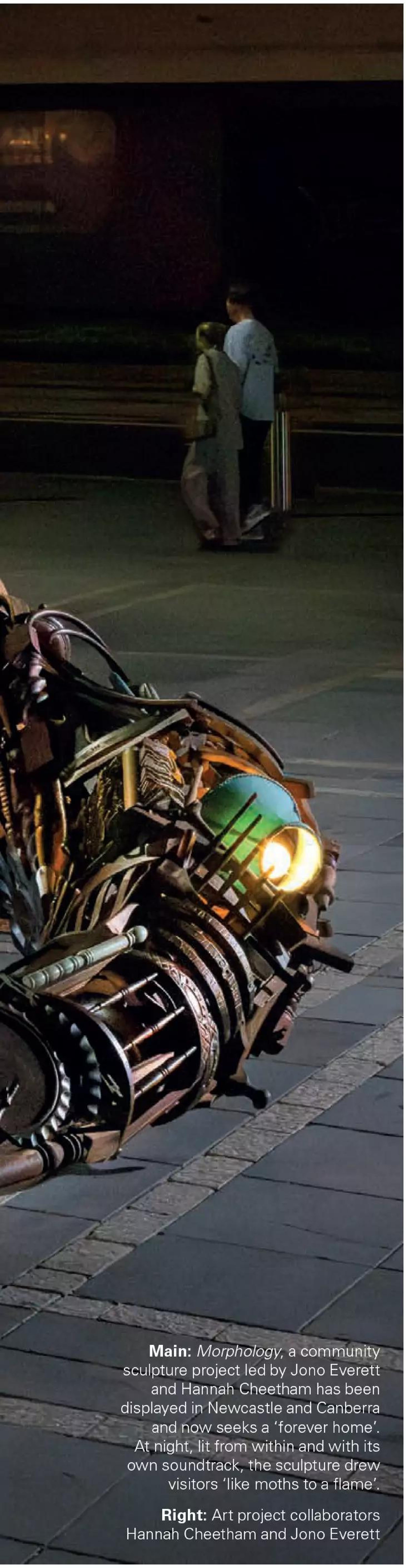




The Art of Collaboration

Last year 170 people came together to build a large sculpture titled Morphology that has been shown publicly in Newcastle and Canberra. Jono Everett writes about the project that he and Hannah Cheetham brought together 'in-hand'.

Morphology is a 9 metre long sculpture created in-hand with collaborator Hannah Cheetham. Its name refers to the study of form and structure, however its artistic theme centres on 'memory' – exploring themes of 'harmony and dissidence'. A complex and rich puzzle.

Our memories hark back to home, a concept as much as an actual place. A refuge from the world, home is not simply a physical space where we eat and sleep – it's the place where we can be ourselves. The evocative notion of 'home' conjures feelings of warmth, a place we can dream and a place where memories are made.

I'm a furniture designer maker and artist with 30+ years on the tools and co-manage the Soap Factory Artists Studio in Newcastle. Hannah's practice, Built In-Kind, is a synthesis of architectural design, workshop and fabrication education, material recovery and community development.

The real heroes of this project though were the 170+ members of the public who bravely came to assist in the sculpture's fabrication, (probably not really knowing exactly what they were up for), carefully guided by the artists and assisting technicians. Zero casualties!

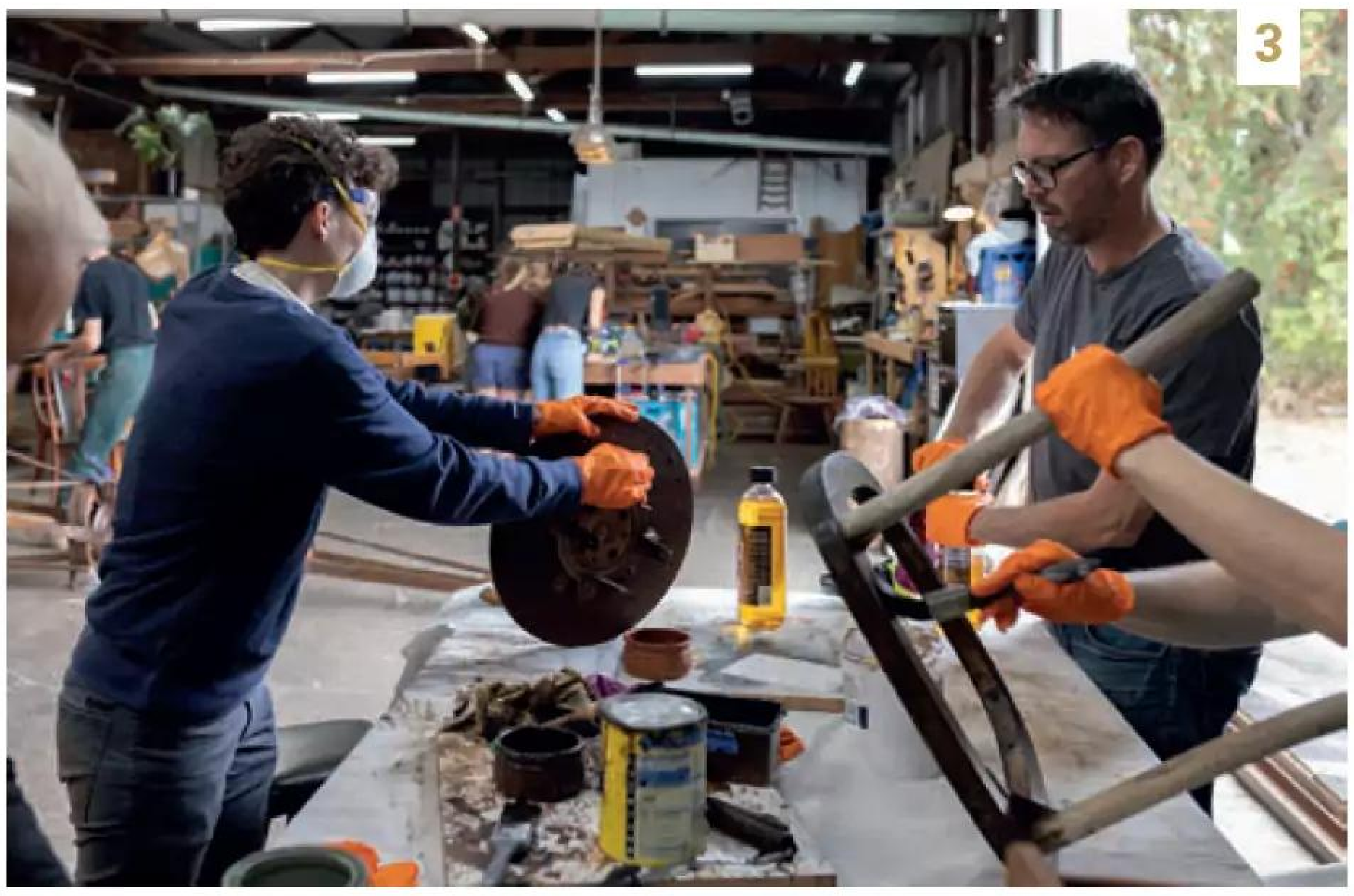
Morphology instils, embodies and wraps itself around the emotionally charged feeling of memories, relatives and childhood experiences past – inviting the viewer to explore the details and concepts woven into the form.

Morphology was fabricated from hundreds of reclaimed and discarded wooden furniture components, disposed and no longer considered valuable. The salvaged furniture was collected from the roadside or donated to the project.

Main: *Morphology*, a community sculpture project led by Jono Everett and Hannah Cheetham has been displayed in Newcastle and Canberra and now seeks a 'forever home'. At night, lit from within and with its own soundtrack, the sculpture drew visitors 'like moths to a flame'.

Right: Art project collaborators Hannah Cheetham and Jono Everett

Discarded furniture pieces, are simply that. However each one is imbued with a history, a life before of function, design, meaning and memory. Once ubiquitous, wooden chairs and tables were in every Australian home, lasting through generations. The look and feel of antique, often dark walnut-stained timber furniture is so instantly recognisable and



1. Parked at the Soap Factory in Newcastle, Jono's ute is laden with some of the components used to form Morphology.
2. For some, it was first-time exposure to a workshop environment and learning basic skills.
3. Participants brought some of the sculpture's components.
4. Bent laminated straps formed a skeleton for the attachment of reclaimed and discarded wooden furniture components. Participants worked in groups of ten in straight sessions over a seven day period.

evokes this feeling of home, somehow familiar and reassuring but perhaps something now lost.

The pervasive dark staining of these table and chairs is a leftover from our European forefathers where the mission statement was to 'stain first and ask questions later'. Often hiding the beauty and spectacular colours of Australian timbers to give way to a look reminiscent of English walnut, a longing for home, which in this case, was somewhere very far away.

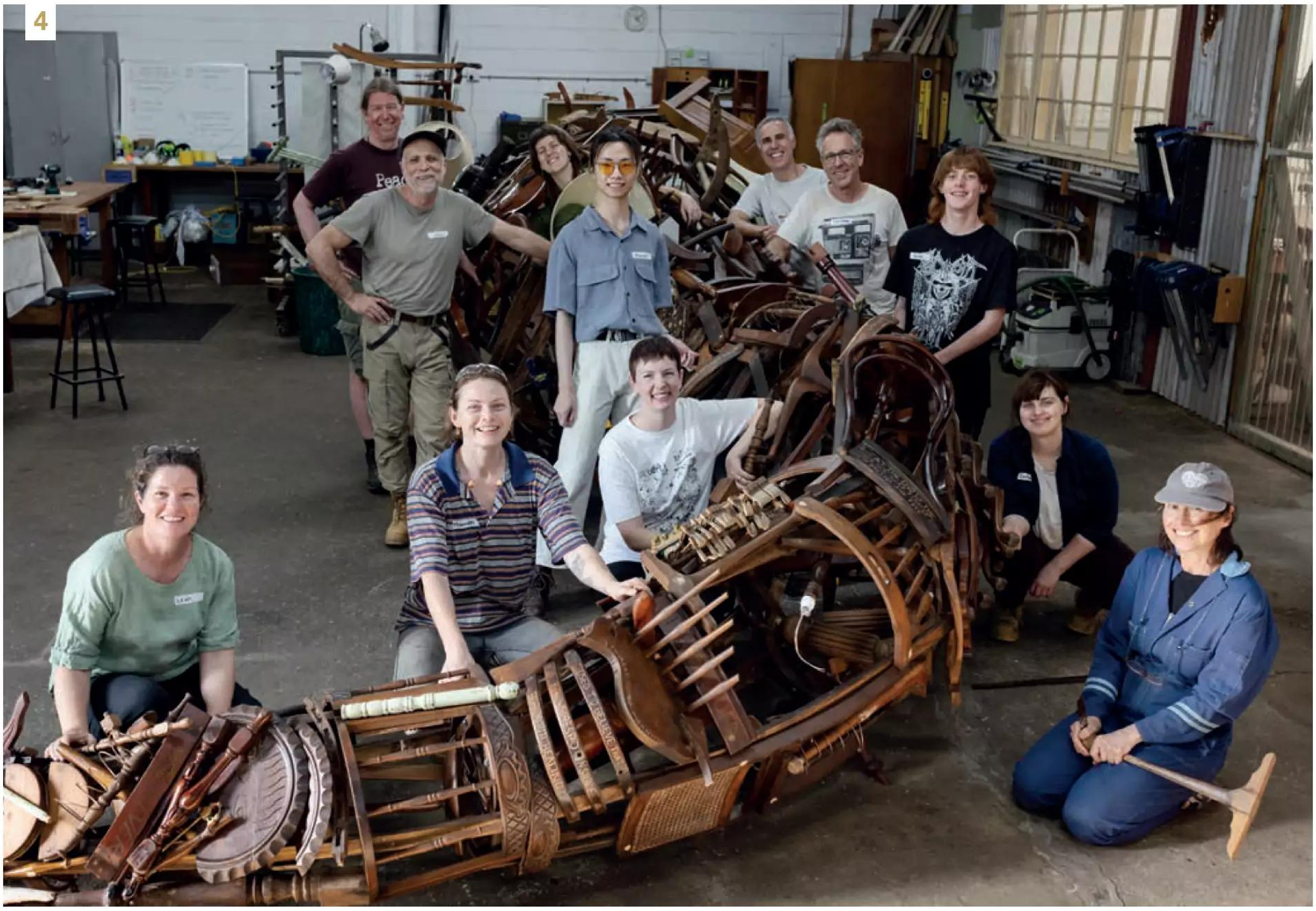
Furniture components for the sculpture were selected to evoke memories of childhood, grandparents, holidays and stuffy homes. During the fabrication process, participants were chatty, silly and hugely fun but regularly were often stirred by strong feelings of melancholy and nostalgia – immediately apparent in the work. Memories are not necessarily always good. *Morphology* allowed for the artists and contributors to express feelings of longing, loss and yearning.

The sculpture's zoomorphic form was designed to be evocative of a 'living' siren or a horn, speaking out these voices and memories. 'Teethed' at its snout, with an idiosyncratic whipping tail and given the large scale, the work has a powerful presence. The sculpture has two distinct personalities – complex during the day and a softer, ambient appearance at night, with the timber warmth highlighted from within.

Freestanding floor lamps are woven into the structure which very slowly illuminate and die down in tempo with the ambient soundtrack, paced to give the perception of the breath of a giant slumbering beast, hopefully invoking a reaction that is off-kilter or slightly disturbing. Small children will ask: 'Is it dangerous...? Am I allowed to...? Why is that...?' They will fully engage.

The project was hosted in the former Sunlight Soap and Candle Factory (1886) – now the Soap Factory Arts Studio on Awabakal land (Newcastle). I co-manage this beautiful historic space, housing 11 artists, working in different mediums – bronze, fibreglass, jewellery, ceramics and photography. We try hard to ensure the Soap Factory is inclusive and we undertake mentoring, share skills and technical insights with each other, support younger emerging artists and work on projects collaboratively. The Soap Factory has a focus on having the lightest footprint and, for projects such as this, use reclaimed materials wherever we can.

Over seven straight days in 10-person sessions, 170+ public participants experienced something really unique – an explosion of fun, creativity and hopefully learning something new. Broken and preloved items, often loaded with sentimental value, were contributed by participants. Through collectively imagining and making, participants were able to explore ideas, gain hands-on experience and skills in design, construction and fabrication.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Participants were taught basic woodwork and wood finishing skills, including sawing, marking out and simple joinery as well as gaining exposure to a workshop environment. Many participants had never experienced working with their hands, working with timber, making or exhibiting an artwork. We invited them to work toward a singular artistic vision and they were encouraged to engrave a message into their furniture pieces – a line from a poem, a song lyric or a memory or dedication. Hundreds of hidden messages are within the sculpture – a hide and seek for others to find and reflect on.

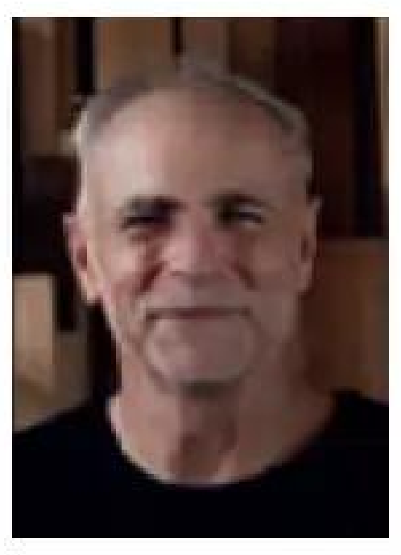
The sculpture was constructed using a series of ever reducing laminated pine hoops, in four demountable sections, tied together with bent laminated timber 'straps', providing the skeleton for 'beast-like' form. Components were then fixed to the outside of the skeleton, triangulating to touch at least three other points, leaving the inside hollow and for excellent rigidity and relatively low weight. Everything was uniformly stained 'walnut', oiled over and over to give a degree of longevity outdoors.

If you are reading this you are most likely a maker, artist or lover of beautifully made things. If you are a fine furniture maker like me, spending hours paring back microns of timber under a bright lamp placed 50mm from your face, there is nothing more liberating than letting go of the steering wheel, making work that is only semi-planned, placing and shaping things, stepping back, observing and continually reconfiguring. At close range, *Morphology* appears as a mess of intersecting parts, but stepping back, the shape and flowing forms reveal themselves. At night, audiences are drawn close, like moths to the flame.

With institutions offering courses in the art of fine making disappearing, I feel an ever-increasing responsivity to impart my woodworking knowledge, even a little bit. Projects like this are a great vehicle for this. If you also have this opportunity to teach, demonstrate of mentor, take it – when people discover they too can use their hands to create it is truly empowering.

Morphology was brought to life thanks to Newcastle New Annual Arts Festival and has just returned from being exhibited at the High Court of Australia for Canberra's' Enlighten Festival. Morphology is now looking for a forever home.

Lighting: Jarrod Pak
Soundscape: Dark Pattern
Photos: Edwina Richards Photography



Jono Everett @everett_creative is a frniture maker, artist and designer in Newcastle. You can read more about Jono's practice in AWR#123. Last issue Jono wrote about his five design principles as applied to the making of his Tuned table. Learn more at www.everettcreative.com.au

The Soul of Steel

James McGregor recently visited the toolsmiths of Miki in Japan, and writes about their work and the challenges they face.

In the south-western reaches of Japan's main island of Honshu, nestled between the Seto Inland Sea and mountains, lies the city of Miki. With a modest population of around 70,000, the city is quiet, and the contrast between its tranquillity and the urban sprawl of neighbouring Kobe and Osaka is striking.

Miki is one of Japan's oldest blacksmithing hubs. Its history dates back to the 8th century when blacksmithing and forging techniques were brought across from Korea. Its identity as a toolmaking centre emerged much later, when local blacksmiths turned their skills to support the influx of carpenters sent to rebuild the city following its destruction in 1578.

Today, the city remains one of the last hubs of hand-forged woodworking tools. It is home to a handful of master blacksmiths maintaining centuries-old traditions, crafting *nomi* (chisels) and *kanna* (planes) that many consider the pinnacle of hand tools.

I have been lucky enough to visit Japan on multiple occasions, and on my latest trip, I was fortunate to visit kanna maker Uozumi-san of Tsunesaburo and chisel smiths Ioroi-san and Takahasi-san, to discuss the challenges and future of toolmaking in Miki.

The distinctive character of Japanese tools

For most readers of this article, Japanese chisels will be nothing new. They have long been popular and revered as among the best hand tools available. The most obvious distinction from their western counterparts is their laminated blade consisting of an incredibly hard high-carbon steel cutting edge forged to a soft iron body. However, the real distinction lies in something less tangible that the Japanese call *tamashi* or soul.

While many western tool manufacturers have fully embraced modern machining and CNC technology, the process of forging high quality Japanese tools remains largely traditional. Some machinery such as power hammers is now commonplace, but the skill of the maker remains essential.

The forging process

The process begins with heating the metals to glowing yellow-white heat before hammering the steel and laminating the hard cutting edge to the body of soft iron. Through this process, the steel's grain structure is refined and impurities removed.

What distinguishes the master blacksmith is their profound understanding of how each strike of the hammer fundamentally transforms the steel at a molecular level. As the metal is repeatedly heated and hammered, its crystalline structure changes dramatically. The forceful impacts break down large, irregular grain structures and realign them into finer, more uniform patterns. This microscopic rearrangement is crucial – it eliminates weak points and stress concentrations that could later lead to failure in the finished tool.

The blacksmith must also carefully control the carbon content in different parts of the blade. During forging, carbon migration occurs between the high-carbon cutting edge and the softer iron body. The master smith intuitively understands how long to maintain certain temperatures to achieve the

Opposite: The tang of the chisel is forged and shaped after the lamination has been completed.

Left: The colour of the steel indicates when it has reached the right temperature or needs to be placed back in the forge.

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perfect carbon gradient – concentrating hardness exactly where needed while maintaining flexibility elsewhere. This delicate balance cannot be replicated by machines alone; it requires the sensory feedback loop of eyes watching colour changes, ears hearing the subtle differences in the ring of hammer strikes, and hands feeling the resistance of the metal.

At the heart of this transformation is the blacksmith's understanding of heat. The delicate process of heating and cooling determines whether a tool will hold its edge through countless sharpening cycles or chip at the first challenge. These judgments rely on ambient lighting conditions, the blacksmith's eyes, and experience accumulated through forging thousands of tools. The traditional Japanese process of multiple folding and forging (*tanren*) creates layers within the steel that strengthen it while removing impurities, resulting in a material far superior to its original state. The equipment used varies depending on the smith, with craftsmen such as Takahasi-san preferring traditional charcoal forges while Ioroi-san and Tsunesaburo utilise more modern gas forges. Regardless of what is used, the most crucial tool is the blacksmith's senses.

Once the steel has been refined and the lamination complete, the neck and tang of the chisel are formed. Final shaping, including the distinctive *ura* (hollow) on the back of the chisel is done on a large grinding wheel or by hand with a sen. No guides are used in this process, instead relying upon practised motions and experience. The chisels are then tempered, honed, and fitted to their handles, ready for final set-up by the eventual owner.

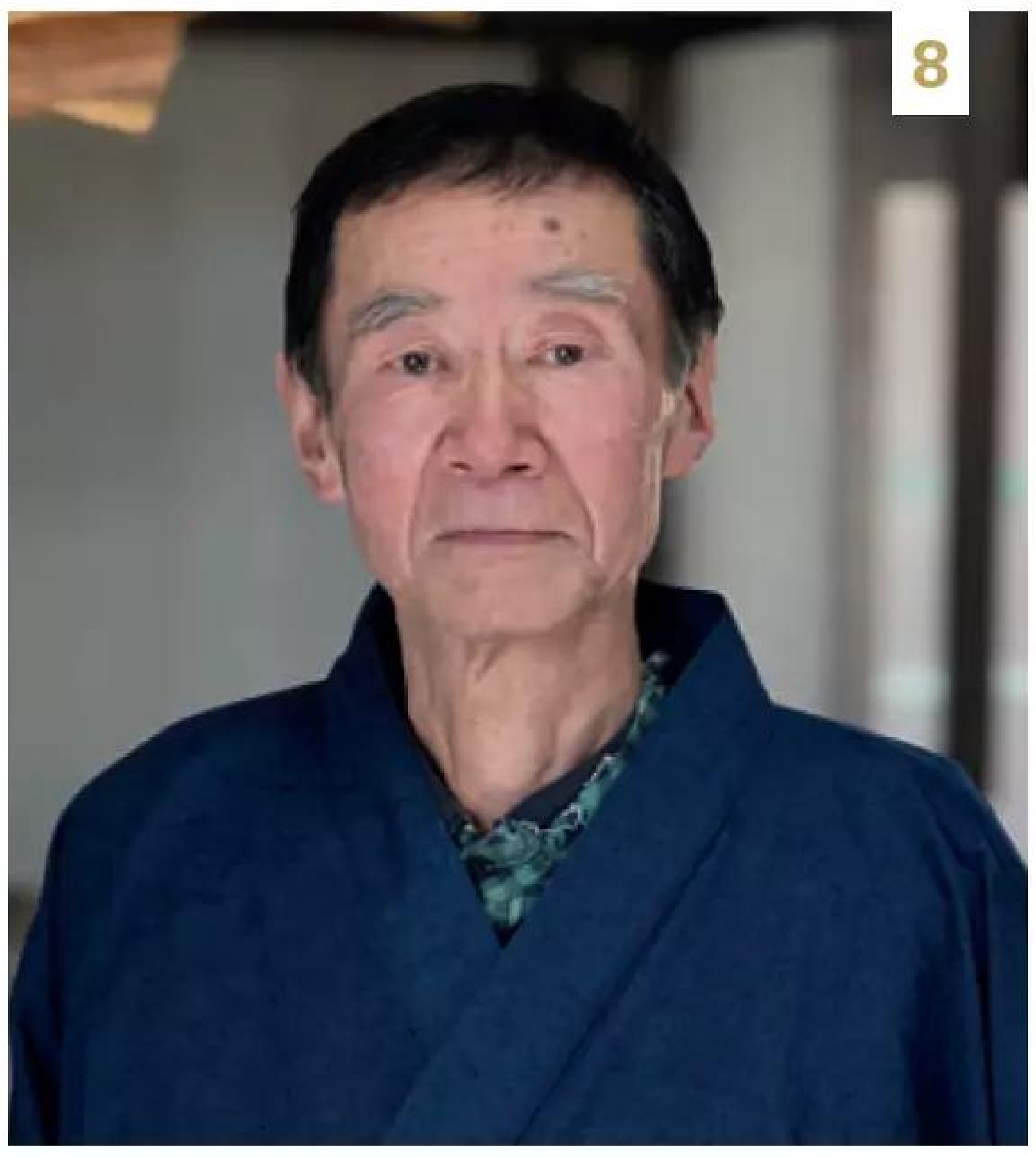
In total, a set of chisels can take days to complete, and through the process, each tool takes on its own character, with subtle variations reflective of the idiosyncrasies of its maker. Properly forged, these tools achieve a perfect balance of hardness and resilience – tools that can hold an edge capable of shaving microscopic layers of wood while withstanding the repeated impacts of mallets and hammers, designed to last the lifetime of their owners.

This individuality and character were on full display when I visited Takahashi-san's small workshop. Now in his 70s, he has forged thousands of blades. The variety on display was truly impressive, from large timber chisels (*yataki-nomi*) to delicate dovetail chisels (*shinogi nomi*), and even traditional spear planes (*yari kanna*). Such variety is testament to his creativity and skill.

A dying art

Despite being widely recognised as a stalwart of tradition, the forging techniques of Miki are a dying art. The average age of Miki's traditional smiths now exceeds 70, and only two have apprentices. With the standard apprenticeship taking up to 20 years to complete, time is ticking to pass down the knowledge to the next generation.

Speaking to Ioroi-san, he explained that this is a calling which must be done out of passion. The work is hard on



1. Heat management is solely dependent on the sight and experience of the smith.
2. It can take 20 years of training to know exactly when the steel has reached the right temperature. Ioroi-san is one of the few smiths left passing down this knowledge.

3 Power hammers relieve some of the physical demands, however the process remains heavily manual.

4. The signature lamination of Japanese chisels is achieved through welding the hard cutting edge (*hagane*) to a soft iron body (*jigane*).
5. Second-generation blacksmith Takahasi-san. Now in his 70s he has no successor.
6. Made by Takahasi-san, Tatakinomi chisels such as these are typically used for timber framing, at just under 300mm they are much larger than the *oire nomi* most are familiar with.
7. Material shortages are nothing new. These chisels are forged from traditional iron which originated from Sheffield in the late 19th century. Once the preferred material for the *jigane* this has been replaced by modern soft iron which is more readily available.
8. A master of his craft,Takahasi-san produces a range of traditional tools including *kanna*.

the body, and even with government subsidies as a traditional craft, he explained that the life of a blacksmith is not a glamorous one. As one of the few artisans in Miki with a successor, he still fears that much of the knowledge will be lost with his generation.

Modern challenges

Just as in the West, power tools have taken their toll on the craft. Where once a Japanese carpenter's tool chest contained no fewer than 20 chisels, many have now replaced these with power tools for efficiency and are no longer willing to invest in hand-forged tools that once formed the backbone of their craft.

Part of the problem the blacksmiths of Miki face lies in the economy of scale. Production is limited by the hours in a day, and although the price commanded by hand-forged tools may be higher than mass-produced equivalents, the daily output can't make up the difference. Combine this with the time taken to establish a reputation and name capable of commanding decent prices, and it isn't hard to see why so few of the artisans in Miki have apprentices.

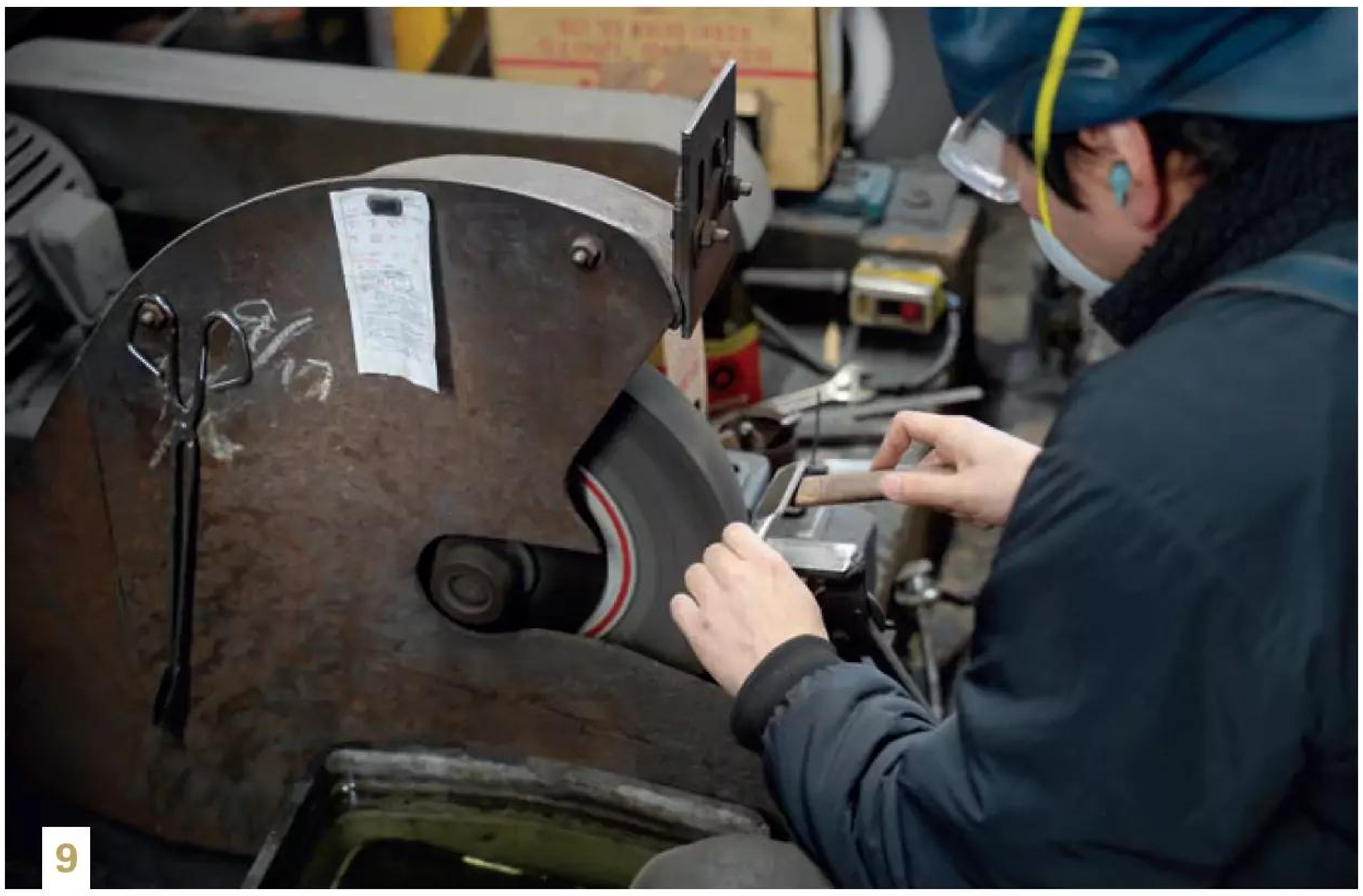
Material shortages provide another hurdle, with the *shirogami* (white paper) and *aogami* (blue paper) steel most commonly used for the hard cutting edge of traditional tools now in limited supply. Once readily available through Hitachi Metals, the company announced discontinuation of production following its sale to US-based investors in 2022. According to Takahasi-san and Ioroi-san, most smiths will retire once their current supply is depleted.

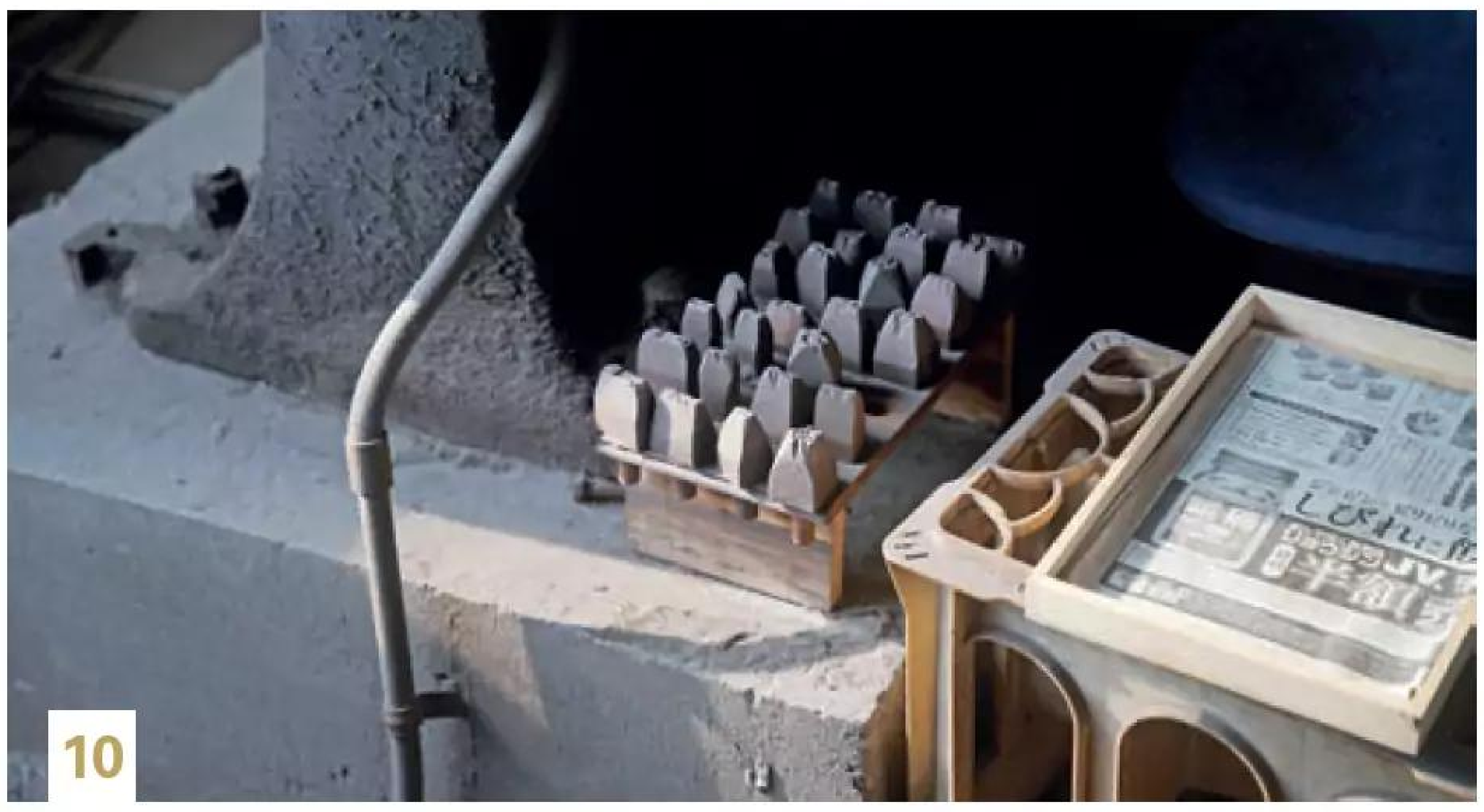
The future of traditional craftsmanship

What does the future hold for Miki's traditional blacksmiths? The answer likely lies in a careful balance between preservation and adaptation.

Technology has paradoxically helped preserve tradition. Social media and an increasing number of videos demonstrating proper tool set-up, use and maintenance have helped demystify traditional Japanese woodworking tools. Uozumi-san and Ioroi-san both expressed that survival would not be possible without the increase in international demand, which has helped supplement the decline in local demand.

The Japanese government has also recognised the cultural importance of traditional crafts, designating some smiths as 'preservers of intangible





9. The *ura* (hollow) is ground on a large grinding wheel. This makes flattening the back of the chisel much easier given the hard steel used.

10. Tsunesaburo produces several series of kanna with a wide range of different steels. These stamps are used on the head of the blade to mark the respective series.

11. These Tsunesaburo kanna are ready for bevel grinding and fitting to their dai.

cultural assets'. This designation brings modest stipends and opportunities to teach, helping ensure skills transfer to the next generation. This, along with efforts from institutions such as the Traditional Arts Super College of Kyoto to preserve and teach traditional toolmaking, provides some hope that a new generation of toolmakers will emerge.

Innovation within tradition offers another path forward. Some smiths have begun to move towards new materials and the utilisation of modern machinery. Tsunesaburo's Miki series kanna are the perfect example of this, utilising HAP40 steel for the cutting edge with a modified ura to reduce the maintenance requirements for users unaccustomed to kanna. Specialised machinery has assisted in increasing production levels to a more sustainable level.

Some traditions will inevitably be lost. The number of smiths will likely continue to decrease, with production consolidating among fewer masters. Certain specialised tools with diminishing demand may cease to be produced altogether.

Yet the core techniques – the careful lamination, the judicious heat treatment, the harmony between hard edge and resilient body – should survive. The tools themselves will continue to evolve, perhaps incorporating new alloys or addressing new woodworking techniques.

The value of tradition

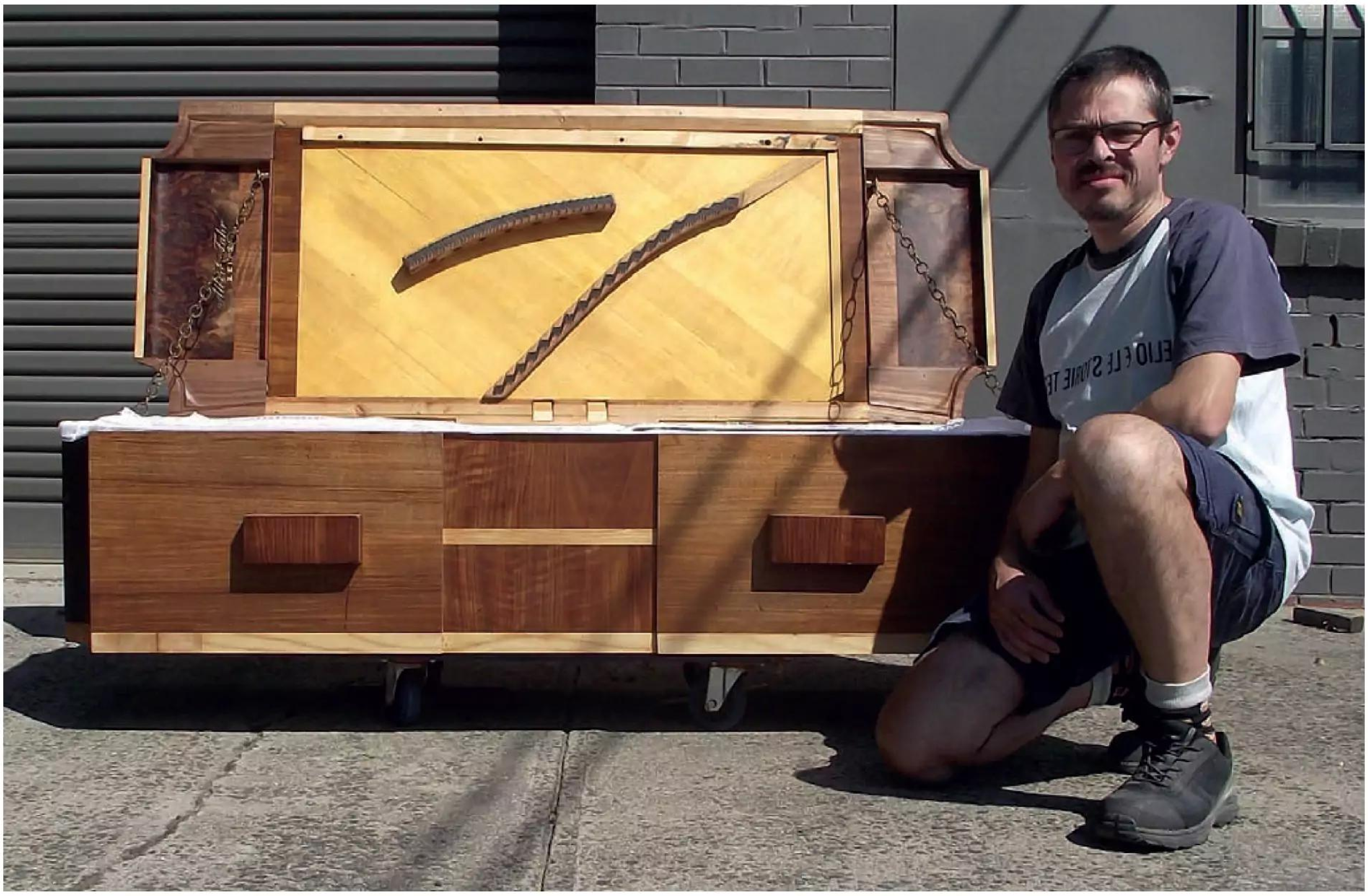
Whether the investment in hand-forged tools is worth it, is largely an individual decision. A hand-forged chisel might cost five times more than a mass-produced version but will last generations with proper care. The performance difference – particularly in demanding applications like fine joinery or carving – makes the investment worthwhile for some.

Perhaps even more importantly, these tools provide a tangible connection to centuries of craftsmanship, something ever more precious in a world dominated by digital processes and disposable products. The soul in the steel of a Miki chisel represents not just Japanese tradition, but the universal human drive to create objects of lasting beauty and utility – a value that transcends cultural boundaries and speaks to woodworkers everywhere.

By valuing these tools appropriately – recognising them as investments rather than consumables – woodworkers worldwide help ensure that the fires of Miki's forges continue burning, and that the rhythmic hammering of steel against anvil will sound for generations to come.

Photos: James McGregor

James McGregor is a Melbourne based jeweller and designer with a passion for woodworking and traditional skills. Two years ago he founded Alasdair Davidson Tools with the aim of retailing handcrafted tools on behalf of a select number of makers. Learn more at www.ad-tools.com.au



Another Life

Lorenzo Rossetti describes an unusual but meaningful recycling project.

Well…this is my first time, in many ways. It is my first time writing for a magazine, first time making a casket for cremation, and indeed my first time transforming an old piano into a casket.

I'm Lorenzo, a woodworker who for some time has been collaborating with Pianos Recycled in Melbourne to transform old pianos into furniture, memento boxes and whatever the customer might desire, to continue the legacy that a piano brings together with its memories.

This time the scope was a coffin made entirely of an old piano that our customer Leslie played for more than 60 years as a music teacher. What a story right there, and full credit to her for coming up with this idea!

It was not a simple task as there were many things to take into account, such as regulations and appropriate measurements. In a few words, I needed to learn how to stretch timber.

Transforming pianos is generally challenging and differs from classical woodworking. In this instance, some of the wood was bowed, cupped or twisted, some was lower grade or poorly veneered and had lived in a too-dry environment. I had to use a budget piano's material where parts were veneered only on one side on a substrate of English lime.

After assessing the parts of the disassembled piano, I came up with a sketch and a plan for achieving the best result. For symmetry, the axis of the parts had to be turned 90° and in general rearranged to achieve the desired dimensions. I had to make use of all the piano timber before using new material. There were regulations regarding the seal, and for cremation non-toxic glues and finishes had to be used.

I had to overlook the condition of the parts (bowed, beaten or ruined by age), the symmetry of veneers and matching joints, and close an eye (sometimes both) as to what fine woodworking is all about.

Main: Lorenzo Rossetti with the completed casket commission. The brief required all parts of the piano to be used before additional materials could be added.

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For the base I used the main frame of the piano, then joined the posts together using a mix of half lap joints, dominos and simple glue joints. The posts were tapered, so I minimised waste by following their shape and matched to join the opposite taper.

The upper front panel and sill of the piano were joined with glue and pocket screws to create the head and foot of the casket. For the sides, the piano endplates were dominoed, biscuited and 'extended' with other parts. Every cut needed to be as precise and as conservative as possible given the limited amount of material available. One wrong cut and you're out…

Not having a clear plan on how to proceed with the lid (I couldn't work it out on paper), I began processing the parts as a two-section lid where the fallboard would make the head end. Happily, a better idea came from Lesley however, which also brought unforeseen challenges.

I resorted to using four blocks of solid walnut to close up the corners, while admittedly closing my eyes and silencing the voice inside me, because nothing was lining up. And yet I had a blast carving all the profiles to match the existing ones, as well as carving some decoration on the inside.

The handles were made from the piano feet as I couldn't find suitable options for cremation available that weren't sold in bulk. These were shaped and securely fixed with screws and glue.

The piano soundboard was cut and joined to seal the interior of the lid and a moulding used to reinforce the hinged side before installing the satin lining. I then sanded and scraped off the old finish to lower the chance of rejection at the crematory and finished with a simple coat of hardwax oil, enough to pop the old grain.

The end result is a little different to my taste yet the piano can still be seen. I maintained certain engravings, the lock and some other features that still allow it to identify the piano as it was. There was very little material left over, making this transformation a success.

A question does arise. Why do I do this? This kind of work is time consuming; nothing comes out straight, often the wood isn't of the best kind, and the end result can be 'eclectic'.

However the timber can be exceptional at times. Recently I've had the pleasure of transforming an old American organ completely made

1. Reconfiguring the piano parts into panels was challenging.

2, 3. Several glue-ups were needed to use up small and variously sized parts.

4. With many unforeseen challenges, work proceeded with decisions made along the way.

5. Some carved decorations were added to the interior.

6. There was very little material left over, making this transformation a success.

7. Satin-lined and refinished in a hardwax oil, the casket is ready to take its eventual owner to another life.

of quartersawn white oak, another one in walnut – valuable timbers and pleasurable to work with. The internal structure of pianos can be made from English lime, poplar, beech, spruce and pine. The outer panels often utilise wonderful veneers, most often walnut burls and flames.

My reasons for doing this kind of work is having the opportunity to produce nice furniture using limited and damaged parts. It increases my accuracy – one wrong cut and you're done! I see the techniques and joints used in the piano making industries and learn what not to do (no, don't veneer one side only – if someone asks, say no or give them bananas!).

Importantly, as with this commission, it's the knowledge that my work will go into a meaningful piece that not only carries more than half a century worth of memories but will serve as a final vessel to be showcased onto the most important stage of life.

In this article I would like to thank Pianos Recycled and Lesley for the trust, and also the guys that I share the workshop with who give me ideas and opinions and help me, and also my family and my angel that guides me, always.

Photos: Lorenzo Rossetti

Lorenzo Rossetti @lorenzowoodworking is a bespoke furniture maker and restorer in Melbourne.

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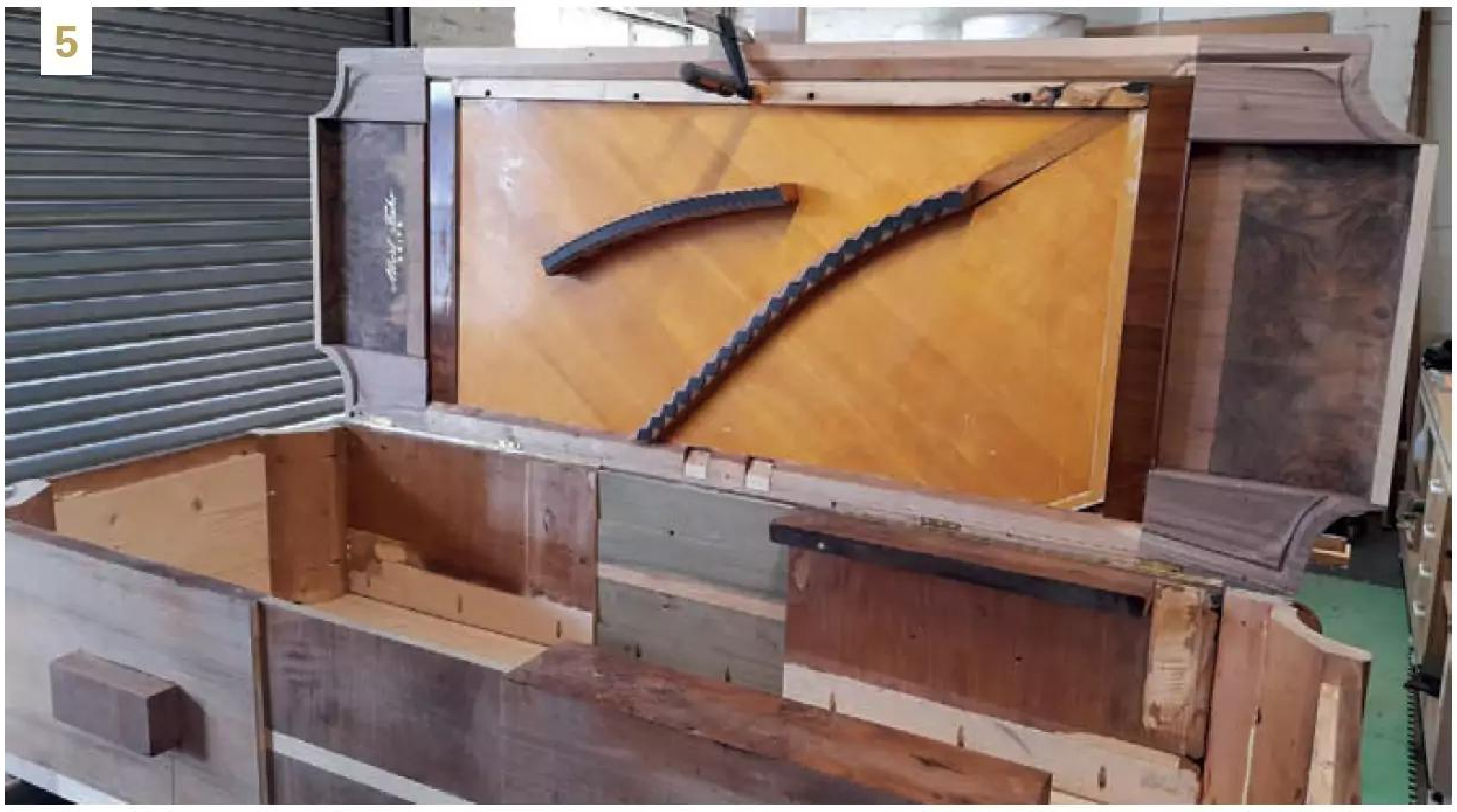

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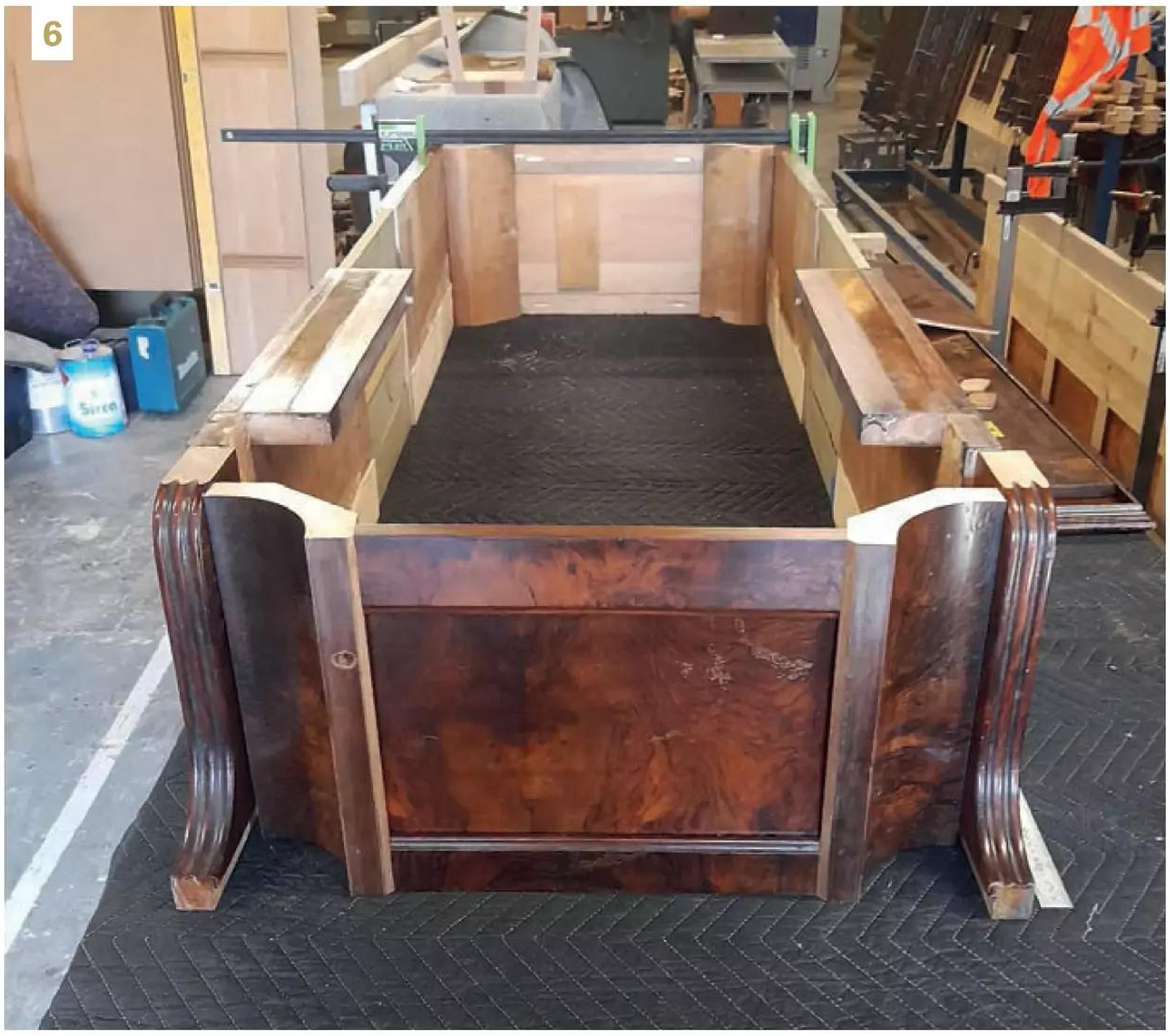

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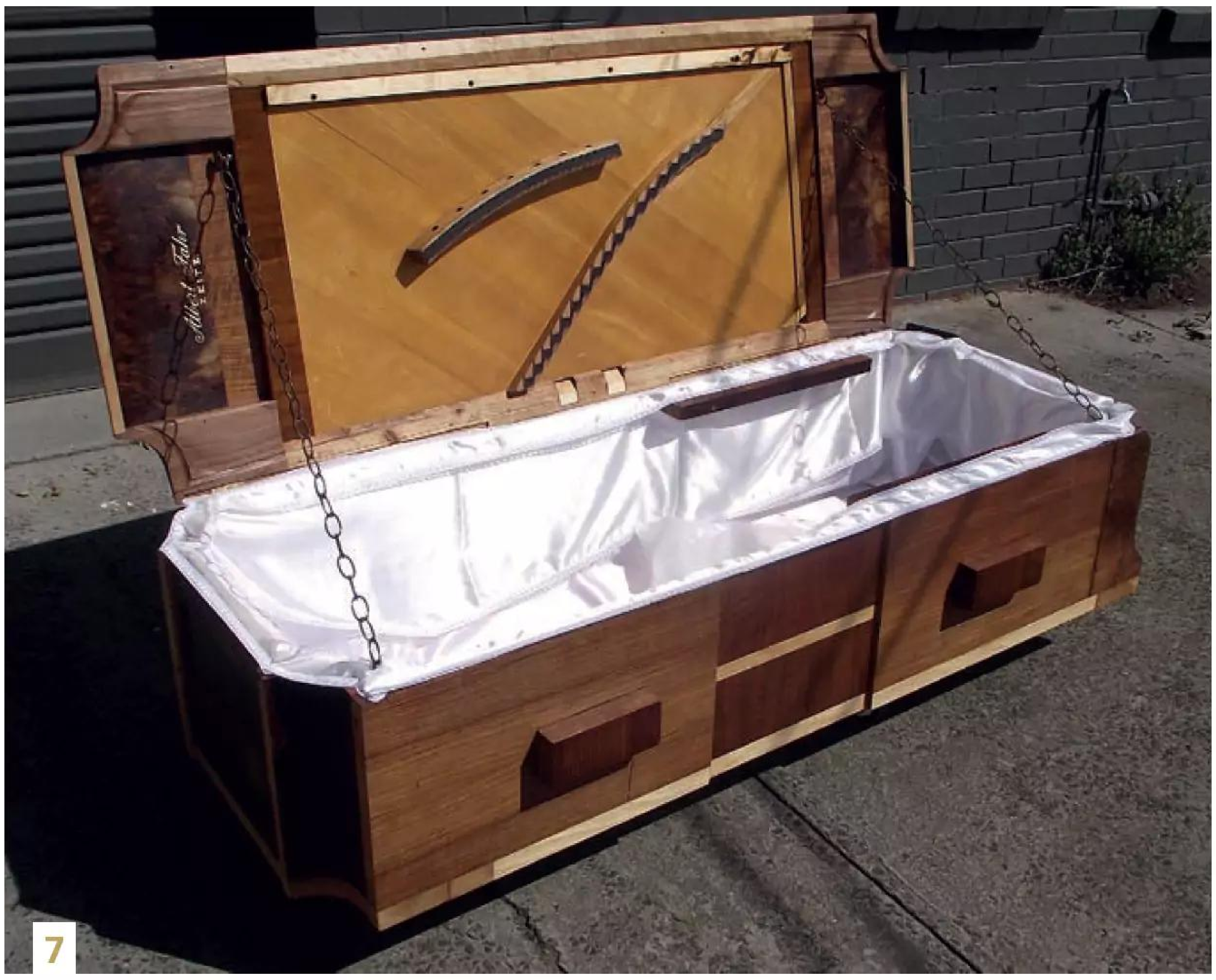

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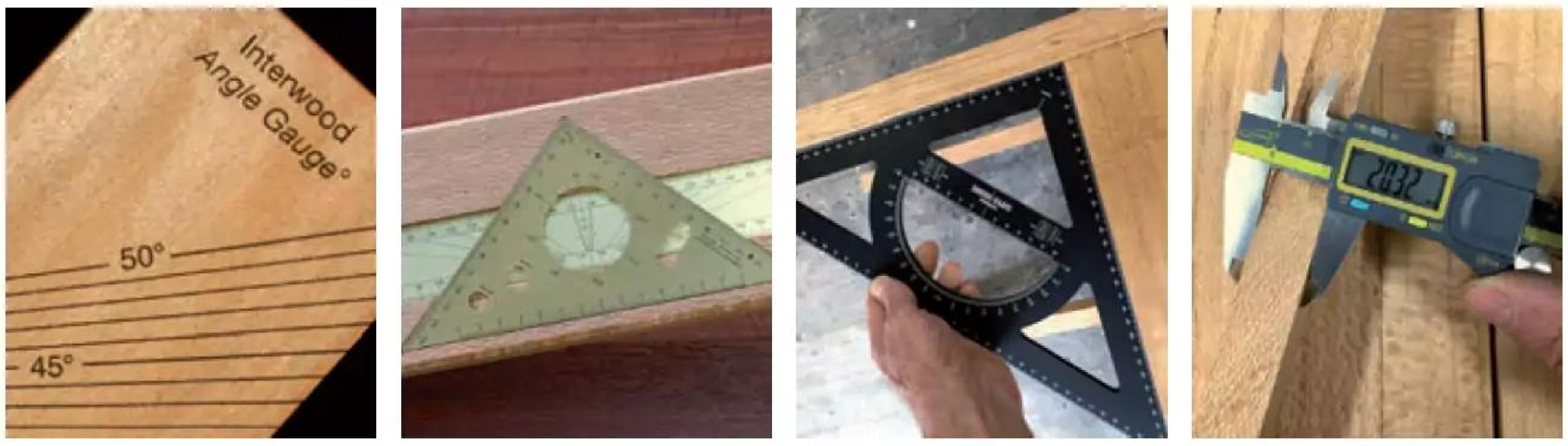
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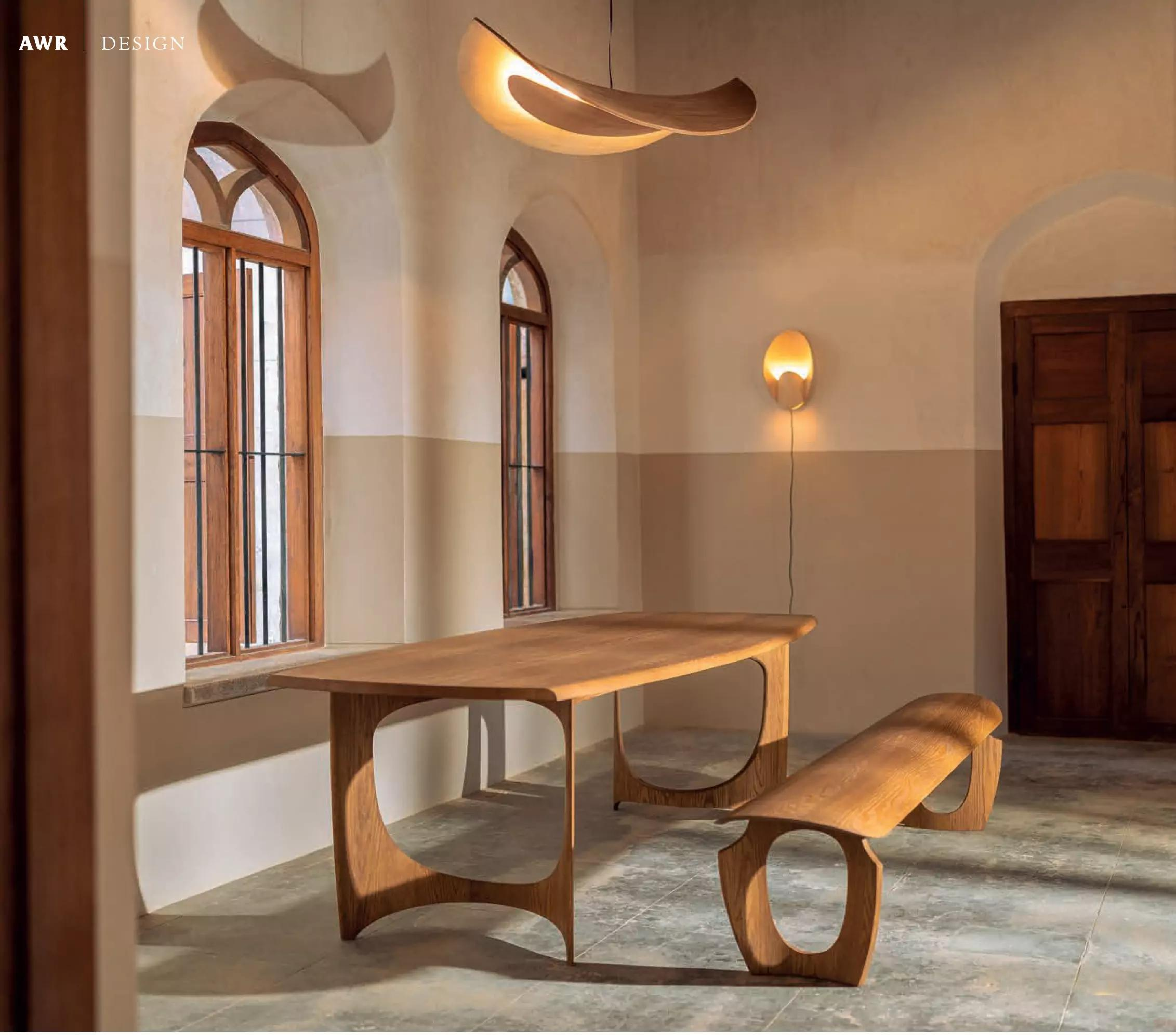


Across Cultures

Melbourne designer maker Adam Markowitz travelled to India for the unveiling of works designed and made in collaboration with Bangalore, India based furniture makers, Phantom Hands.

Refractions is the name of a cross-cultural, international design collaboration that took place between Melbourne designer maker and architect Adam Markowitz and Phantom Hands, Bangalore, India based furniture makers.

The resulting collection of furniture was unveiled in December 2024 at BLR Hubba, a two-week, annual cultural festival in Bangalore in all its fullness and richness.

Made from American red oak, cherry and maple, the collection included a dining table, a bench, two pendant lights and a wall sconce.

Main and left: The *Refractions dining table* was made from American red oak. Two half cyclinders were were curved and shaped for the pedestal end supports. The cut-out became the starting point for developing the light designs.

The bench also took up the theme of bent laminated curves which also added to the rigidity of the 'legs'.

The *Banana Leaf Pendant* also continues the curved theme with its intersecting petal shapes. The inner 'petal' conceals the light source.

'We wanted to be a part of the design process for the products that would get made as part of the collaboration with Adam Markowitz', said Deepak Srinath, co-founder, Phantom Hands. 'Adam came to us with an open mind and the idea for the products came out of several conversations we had with him.'

Phantom Hands is a leading international brand which offers handcrafted furniture. Their collections include re-editions of historically important mid-century designs, as well as contemporary objects created in collaboration with acclaimed furniture designers such as Danish/Japanese chair designers Inode+Sveje. Dutch designers x+l, German designer Klemens Grund. Recently, Phantom Hands has worked with the Geoffrey Bawa Foundation to reissue the famous Sri Lankan architect's work, launched this year at the Milan Furniture Fair. Adam worked with founders Deepak Srinath and Aparna Rao, and their prototyping team, led by Prachi Sampat.

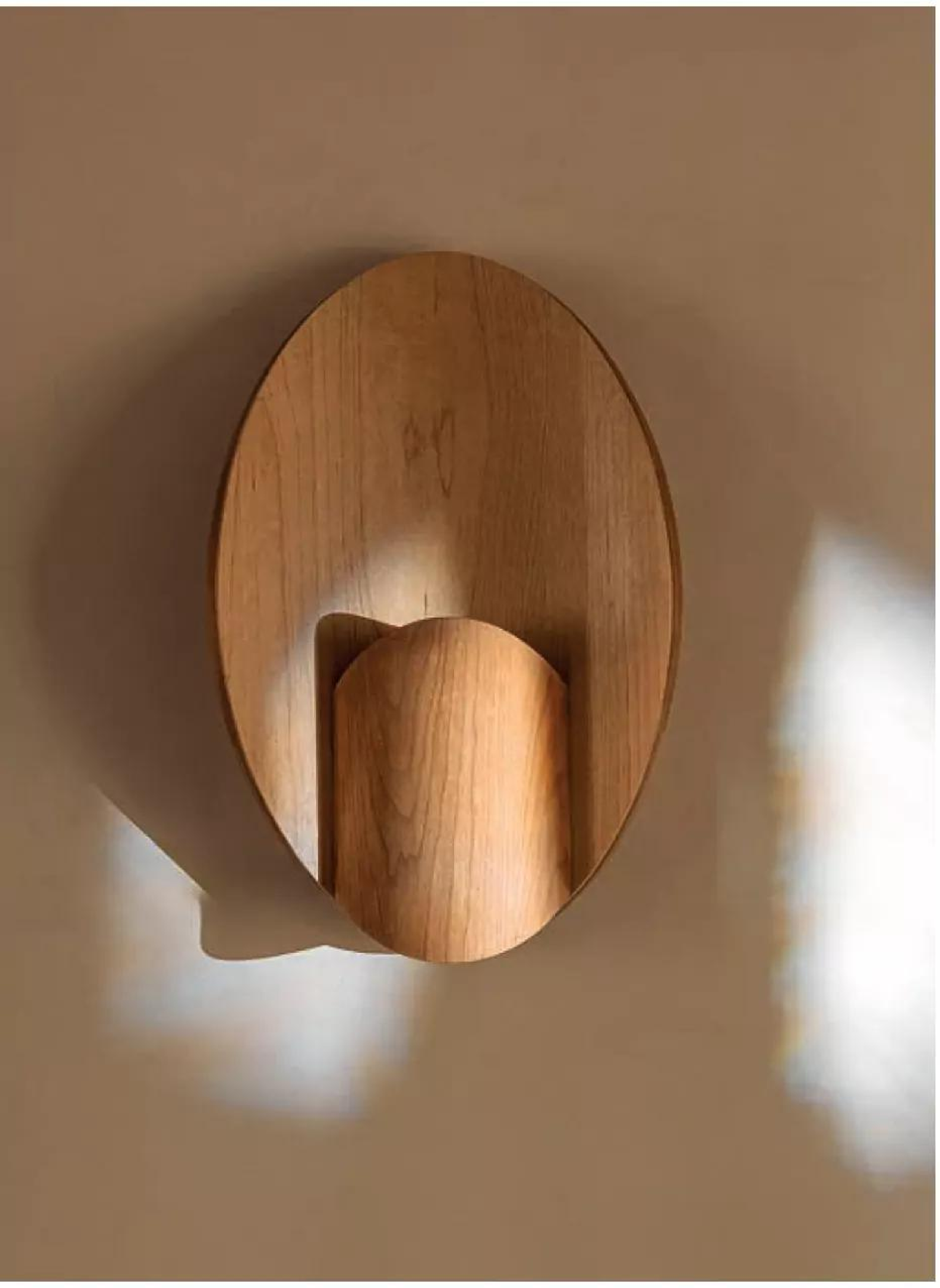
In the initial brief Adam Markowitz was given a specific architectural space to consider as a starting point. Phantom Hands was also aware of the work that Adam had done with bending and curvature in wood, and was interested in learning more about those techniques. Lastly, the wood rose, a unique flower, was suggested as a possible starting point and shaped the initial design process.

'My initial concern was to make sure my work was imbued with an Indian-ness that was reflective of the collaboration and cultural exchange. Working closely with Phantom Hands, the collaboration became far more personal in nature and became less about "an Australian in India" or "Western designer maker meets Indian designer maker" and far more 'Adam meets Phantom Hands'. I think the result of this interpersonal, process-based method speaks for itself in the work made together – looking at the pieces they are not something I would have arrived at working in isolation', said Adam.

The dining table is deceptively simple in structure. Two facing half cylinders were carved and shaped on-site with a jigsaw and hand tools. 'You can barely read the initial cylinder shape at all in the final designs, as the handwork and sculpting has taken the form somewhere else (while retaining the structural logic of the half-cylinder)', explained Adam.

'Whilst I initially set out to design a light, the table concept came quickly and unintentionally, and I think it is my favourite piece of the five. When the prototype was remade, I was asked to draw the shape in 3D so they could reference it for cutting out the legs. I instructed them to use the prototype itself as the reference, as the shapes I had drawn and cut would be better than the shapes I drew on the computer. I think this is an important element of my process laid bare. On remaking the piece, we cross-laminated the veneer into plywood internally to reinforce the structure of the shape to give the piece additional rigidity', said Adam.

The bench again explores the strength of curves. 'The seat and the legs are extremely thin and would never be able to take the structural loads if they were flat. The curvature and the laminating process allows these benches to become very strong with minimal material. If you think of the seat as a curved beam, and the leg



Clockwise from above:
Refractions wall sconce in maple.

In the latter stages of the project, Adam Markowitz worked with the Phantom Hands team in Bangalore.

Species selected for the collection included American maple and American red oak (in the foreground).

as a curved column, these elements are incredibly strong individually, but when connected they also naturally resist racking forces. It is so strong that I was able to undermine the strength of the connection slightly to create a floating detail between the leg and the seat, to give a sense of this lightness and strength.'

At the suggestion of Phantom Hands, a 'dialogue between the table and lights' was created in the designs for two pendant lights and a wall sconce.' Adam started with the idea of a shape that was 'cut out' of the table legs. Prototypes were made with the table leg cut-outs, though the final pieces were ultimately made independently. Their curved, petal-like shapes referenced the wood rose starting point in the brief.

The *Banana Leaf Pendant* intersects two petal shapes along their long edges, creating a strong curved central spine that flows out in a convex shape that diffuses the reflected light. A third petal shape, suspended below the intersecting petals, hugs the curved form above tightly and conceals the light source. The wall sconce intersects two petal shapes face to face to create a reflective surface and a smaller shroud to conceal the light source. One sconce was made from cherry and maple to match the pendant lights, and another from maple.

The project was commissioned by the American Export Hardwood Council and used American cherry, red oak and maple.

Working remotely in Australia and then in-person during visits to Bangalore, Adam was able to help the team from Phantom Hands master methods for laminating timber, including techniques for sawing and stitching veneer, jig making and gluing and vacuum pressing curved components. Despite the language barrier, a rapport and mutual respect was built through skills sharing on a defined project.

Photos courtesy American Hardwood Export Council

Learn more at www.adammarkowitzdesign.com, www.phantomhands.in and www.americanhardwood.org

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